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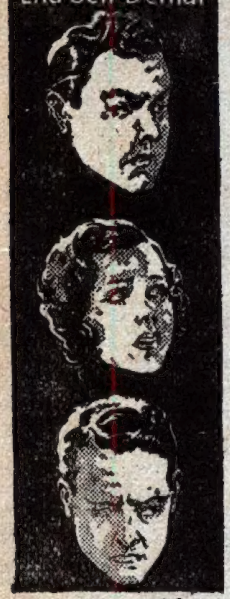

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Science Fiction

Vol. 8 JANUARY, 1934 No. 9

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Our Cover

depicts a scene from the story entitled "Triplanetary," by Dr. E. E. Smith; drawn by Morey.

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AMAZING STORIES

THE MAGAZINE OF SCIENCE FICTION

VOLUME 8

JANUARY, 1934 No. 9

T. O'CONOR SLOANE, Ph.D., *Editor*

Editorial and General Offices: 222 West 39th Street, New York, N. Y.

Extravagant Fiction Today . . . . . Cold Fact Tomorrow

The Rotating Earth

By T. O'Conor Sloane, Ph.D.

IN the AMAZING STORIES Quarterly, in the Editorial, we touched upon some few features of this sphere of ours, which features, unless a person is unutterably cold-blooded, will produce perpetual emotions of wonder. Wonder is produced, we may say, by the unusual in our experience, at least it should require the unusual to excite that emotion, but in the case of this globe on which we have our being, there is so much which we never think of, never picture to ourselves, or sad to say, are ignorant of, that there is food for endless wonder for our imperfect human minds.

The diameter of the earth at the Equator is about thirteen miles greater than at the poles. This does not take into consideration the great mountains at the Antarctic Pole but the assumption for our purposes would be that the Antarctic is what we may call a plane just as the great Polar Sea, with its sheet of ice is almost a plane.

If an athlete wished to break the record jumping to a height, in throwing a ball up into the air, or in anything involving vertical height to be attained as one of its elements, he ought to go to some place where his weight will be at a minimum. If he travels over the earth's surface, he will find that his weight will be less at the Equator than anywhere else on the earth. He will find that if a given mass weighed a definite amount at the Equator, it would increase in weight as it approached the poles. Every thing else being equal, a man would jump higher at the Equator than he would at the North or South Pole. If one was provided with a balance and weights and weighed a given substance, it might be a pound of iron or anything else at the Equator and with the same weights at the pole it would

show exactly the same result. This would be because the centrifugal force of the earth would affect the weights and the substance being weighed to exactly the same degree.

Balances for weighing are constructed on two distinctive plans. In one construction, which we have just alluded to; the substances are weighed by acquiring an equipoise with standard weights. In the other system, which we see used in almost every store where goods are sold by the pound, spring balances, as they may be called, are employed in which the weight is determined by the action produced upon a spring by the weight of the substance being weighed. With a spring balance there is no effect of gravity except on the object we are weighing, therefore, a pound, or any other weight, would show a different result on a spring balance when weighed at the Equator or at the poles—the weight at the poles would be greater. If we carry this out to a full conclusion, if a man bought things by the weight, using a spring-balance, if he purchased them to the south of where we are now and used a balance with weights and sold them in the north, it would be all right if he used a balance with weights. But if he weighed them with a spring-balance a greater weight would be shown where he sold them in the north, than where he bought them in the south, so on the face of it, by using a spring-balance, he would make money by buying in the south and selling in the north at the same price. This, of course, is rather an absurd way of illustrating the action of the motion of the earth on substances on its surface, but it does illustrate it.

If one imagines a shaft sunk into the earth at one of the poles, and a plumb-bob, which amounts to a weight suspended from the end of a cord, lowered into it, other things being equal, the cord would point directly to the center of the earth and if a weight was dropped from the surface at the center of the shaft, it would go down directly to the center of the earth. Now, suppose the shaft was sunk elsewhere, for simplicity's sake, we may say at the Equator. Here the earth's rotation carries all objects on its surface at a speed of about a thousand miles an hour. If the plumb-bob were attached so as to hang at the center of this shaft, it would start to descend with lateral speed of nearly a thousand miles an hour. As it went down it would be affected by a slower rotation of the earth so that it would tend to go towards the west, but this effect would be only temporary and it would eventually come to rest at the end of its line directly on an axis of the earth, on a line reaching from its point of suspension to the center of the earth as before. Now suppose that a weight was dropped from the aperture of the shaft at the surface of the earth, the weight would start to fall, but would be impressed with a motion from west to east of a little less than a thousand miles an hour. As it descended, assuming that it held this velocity by inertia, which it would nearly do, as it went down the shaft it would encounter a diminishing velocity of the earth's rotation, so when it started, it would be given a velocity from west to east of the amount just stated. But as it descended the shaft, the sides of the shaft would have less and less of this tangestial velocity as it may be conveniently described, so that the weight would be virtually projected or thrown by the surface velocity of the earth to the east and sooner or later would strike the eastern wall of the shaft. So if a man tried to reach the center of the earth by jumping into a shaft leading thereto, he should see that his shaft is made exactly at the polar axis of the earth, otherwise he wouldn't ever reach the center of the earth, unless he slid down, on the eastern side of the shaft.

He would rub against it going down.

In an early issue of AMAZING STORIES, an exploit of Baron Munchausen was described, which involved his jumping into a shaft leading through the earth. To succeed in this exploit he would have to use a shaft in the exact polar axis of the earth where the line of fall would be practically coincident with the shaft.

If a projectile were fired vertically from the earth's surface, anywhere except at one of the poles, its initial direction might be vertical, practically while in the bore of the cannon, which we may suppose to have been used. But as it rose to maintain a vertical line of flight it would have to follow the motion of the radius of the earth and to do this it would have to move faster and faster to the east as it ascended and slower and slower as it descended to come back to the place it started from. If the object was to get it back to the place from whence it started, it would have to be pointed to the east of the vertical.

A very interesting book has been written on the long range German guns which bombarded Paris from a distance that is really incredible, in the neighborhood of seventy-five miles. The calculation of the ballistics of the path of flight of these projectiles, must have been very much complicated by this very east and west motion of the earth. It would have been easy enough at the poles where the motion transverse to the path of the projectile, would be almost nothing, but in the latitude of Paris, there was a transverse motion of several hundred miles per hour to be taken into the calculation. The motion of the earth, as they were firing to the west operated to affect the possible range of the piece undoubtedly to an appreciable extent, as compared to its range if fired to the east. Fired to the west it went against the motion of the earth which only affected it because of the height of its path through space.

Very recently this subject has been experimented with in a mining shaft, and it was found that a weight dropped from the surface would always strike the side of the shaft before it reached the bottom. One achievement in athletics was the catching of a baseball thrown from the top window of the Washington Monument in Washington. This gave a fall of about 500 feet or a little over and after a number of trials the ball was caught. It probably never occurred to anyone, that that ball must have been slightly deflected from a vertical line by the motion of the earth.

Ordinarily, a river in the Northern Hemisphere, flowing to the south, will follow approximately the curvature of the earth. Of course the depression of its bed makes a little difference. In the case of the Mississippi, for instance, its mouth is at a considerably greater distance from the center of the earth than is its source, therefore the Mississippi flows uphill. The centrifugal force of the earth makes it do this. If the earth ceased rotating the laying bare of the bed of the sea in the equatorial regions and the flooding of the northern regions would produce terrific effects. If one stands on the seashore with perhaps a line of summer residences 100 yards, or even less distant from the ocean, it is almost startling to reflect that all that protects those houses from inundation far above their roofs is the centrifugal force exercised on the waters of the ocean by the rotation of the earth.

In connection with the falling of bodies, some very interesting figures have been evolved. A body falling in free air is retarded by its resistance, the air opposing its following the law of falling bodies. We have spoken of the baseball thrown from the Washington Monument and caught by an expert player. He had to try nearly a dozen times before he

succeeded, but if the ball fell under the law of falling bodies in a vacuum, it would probably have been impossible for him to catch it—the speed would have been so great.

The rate at which a man falls in air attracted by the gravitation of the earth, has become of interest in airplaning, where parachutes have to be used. The maximum velocity with which a man can fall in air is put at 120 miles per hour, attained by falling 1,400 feet. The velocity just mentioned is that which will be attained in air at approximately normal pressure, but at great heights of several miles, the speed will be still greater because of lower air pressure. It is believed that a Russian parachute jumper who left the balloon at four and one-half miles elevation, may have attained two hundred and twenty miles per hour in his fall, before opening his parachute, but which would be very quickly reduced on approaching the surface of the earth to one hundred and twenty miles an hour.

There is another striking illustration of how the effect of the rotation of the earth may operate, this time on railroads. This is theoretical as it amounts to very little in practise. Let us assume a railroad running directly North from the Equator. The cars start subject to the nearly one thousand miles an hour lateral motion due to the revolution of the earth. As the cars would go towards the Poles, either north or south, this motion would constantly change, and it would grow less and less as it approached the Poles so that the pressure which would be maintained by this change of lateral velocity would constantly press the car wheels against the right hand rail going north, therefore, theoretically we may say that the north-bound train would wear out the right hand rails because the flanges of its right hand wheels would press against the eastern rails. But when it started to come back, the reverse would be the case, pressure would be exerted against the other rails so that the western rail would be the one which would be subject to this wear. This of course is theoretical because the action would be only infinitesimal in its amount.

By following out the theories of the earth's motion and the way in which its polar axis determines the celestial equator and on account of the inclination of the axis to the earth's orbit, results of vital importance to humanity are brought about. The different seasons are due to the almost exact maintenance of polarity of the earth's axis and by the inclination of the plane of the ecliptic to the celestial equator.

At two points in the orbit followed by the earth, the plane of the earth's path, (the plane of the ecliptic), intersects the celestial equator and at these points which occur twice in the year, the day and night all over the earth are almost exactly equal in length, one to the other. These points are called the equinoxes which word means equal nights. As near as we can put it, the night is equal to the day in length at these two points, and the word equinox is an imperfect or incomplete expression of this fact.

SERIAL IN 4 PARTS—PART 1

Triplanetary

By EDWARD E. SMITH, Ph.D.

We are sure that our readers will be highly pleased to have us give the first installment of a story by Dr. Smith. It will continue for several numbers and is a worthy follower of the "Skylark" stories which were so much appreciated by our readers. We think that they will find this story superior to the earlier ones. Dr. Smith certainly has the narrative power, and that, joined with his scientific position, makes him an ideal author for our columns.

Illustrated by MOREY

CHAPTER I

Pirates of Space

APPARENTLY motionless to her passengers and crew, the Interplanetary liner *Hyperion* bored serenely onward through space at normal acceleration. In the railed-off sanctum in one corner of the control room a bell tinkled, a smothered whirr was heard, and Captain Bradley frowned as he studied the brief message upon the tape of the recorder—a message flashed to his desk from the operator's panel. He beckoned, and the second officer, whose watch it now was, read aloud:

"Reports of scout patrols still negative."

"Still negative." The officer scowled in thought. "They've already searched beyond the widest possible location of the wreckage, too. Two unexplained disappearances inside a month—first the *Dione,* then the *Rhea*—and not a plate nor a lifeboat recovered. Looks bad, sir. One might be an accident; two might possibly be a coincidence. . . ." His voice died away. What might that coincidence mean?

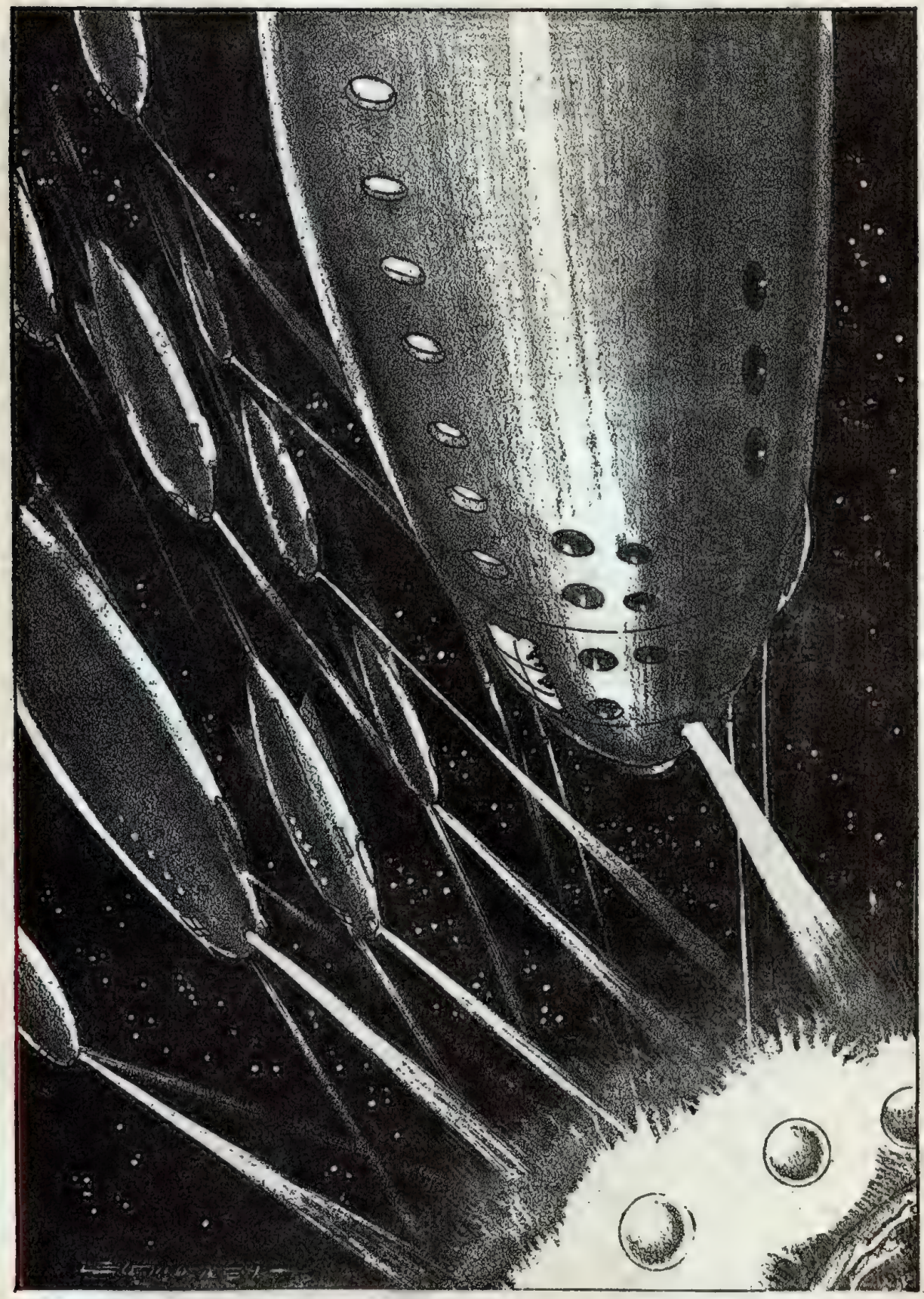
"But at three it would get to be a habit," the captain finished the thought. "And whatever happened, happened quick. Neither of them had time to say a word—their location recorders simply went dead. But of course they didn't have our detector screens nor our armament. According to the observatories we're in clear ether, but I wouldn't trust them from Tellus to Luna. You have given the new orders, of course?"

"Yes, sir. Detectors full out, all three courses of defensive screen on the trips, projectors manned, suits on the hooks. Every object detected in the outer space to be investigated immediately—if vessels, they are to be warned to stay beyond extreme range. Anything entering the fourth zone is to be rayed."

"Right—we are going through!"

"But no known type of vessel could have made away with them without detection," the second officer argued. "I wonder if there isn't something in those wild rumors we've been hearing lately?"

"Bah! Of course not!" snorted the captain. "Pirates in ships faster than light—fifth order rays—nullification of gravity—mass without inertia—r i d i c u l o u s! Proved impossible, over and over



Now, systematically and precisely, the great Cone of Battle was coming into being; a formation developed during the Jovian Wars while the forces of the Three Planets were fighting in space.

again. No, sir, if pirates are operating in space—and it looks very much like it—they won't get far against a good big battery full of kilowatt-hours behind three courses of heavy screen, and a good solid set of multiplex rays. Properly used, they're good enough for anybody. Pirates, Neptunians, angels, or devils—in ships or on sunbeams—if they tackle the *Hyperion* we'll burn them out of the ether!"

Leaving the captain's desk, the watch officer resumed his tour of duty. The six great lookout plates into which the alert observers peered were blank, their far-flung ultra-sensitive detector screens encountering no obstacle—the ether was empty for thousands upon thousands of kilometers. The signal lamps upon the pilot's panel were dark, its warning bells were silent. A brilliant point of white in the center of the pilot's closely ruled micrometer grating, exactly upon the cross-hairs of his directors, showed that the immense vessel was precisely upon the calculated course, as laid down by the automatic integrating course-plotters. Everything was quiet and in order.

"All's well, sir," he reported briefly to Captain Bradley—but all was not well.

DANGER—more serious far in that it was not external—was even then, all unsuspected, gnawing at the great ship's vitals. In a locked and shielded compartment, deep down in the interior of the liner, was the great air purifier. Now a man leaned against the primary duct—the aorta through which flowed the stream of pure air supplying the entire vessel. This man, grotesque in full panoply of space armor, leaned against the duct, and as he leaned a drill bit deeper and deeper into the steel wall of the pipe. Soon it broke through, and the slight rush of air was stopped by the insertion of a tightly fitting rubber tube. The tube terminated in a heavy rubber balloon, which surrounded a frail glass bulb. The man stood tense, one hand holding before his silica-and-steel helmeted head a large pocket chronometer, the other lightly grasping the balloon. A sneering grin was upon his face as he awaited the exact second of action—the carefully predetermined instant when his right hand, closing, would shatter the fragile flask and force its contents into the primary air stream of the *Hyperion!*

* * * * *

FAR above, in the main saloon, the regular evening dance was in full swing. The ship's orchestra crashed into silence, there was a patter of applause and Clio Marsden, radiant belle of the voyage, led her partner out into the promenade and up to one of the observation plates.

"Oh, we can't see the earth any more!" she exclaimed. "Which way do you turn this, Mr. Costigan?"

"Like this," and Conway Costigan, burly young first officer of the liner, turned the dials. "There—this plate is looking back, or down, at Tellus; this other one is looking ahead."

Earth was a brilliantly shining crescent far beneath the flying vessel. Above her, ruddy Mars and silvery Jupiter blazed in splendor ineffable against a background of utterly indescribable blackness—a background thickly besprinkled with demensionless points of dazzling brilliance which were the stars.

"Oh, isn't it wonderful!" breathed the girl, awed. "Of course, I suppose that it's old stuff to you, but I—a ground-gripper, you know, and I could look at it forever, I think. That's why I want to come out here after every dance. You know, I . . ."

Her voice broke off suddenly, with a queer, rasping catch, as she seized his arm in a frantic clutch and as quickly went limp. He stared at her sharply, and

understood instantly the message written in her eyes—eyes now enlarged, staring hard, brilliant, and full of soul-searing terror as she slumped down, helpless but for his support. In the act of exhaling as he was, lungs almost entirely empty, yet he held his breath until he had seized the microscope from his belt and had snapped the lever to "emergency."

"Control room!" he gasped then, and every speaker throughout the great cruiser of the void blared out the warning as he forced his already evacuated lungs to absolute emptiness. "Vee-Two Gas! Get tight!"

Writhing and twisting in his fierce struggle to keep his lungs from gulping in a draft of that noxious atmosphere, and with the unconscious form of the girl draped limply over his left arm, Costigan leaped toward the portal of the nearest lifeboat. Orchestra instruments crashed to the floor and dancing couples fell and sprawled inertly while the tortured First Officer swung the door of the lifeboat open and dashed across the tiny room to the air-valves. Throwing them wide open, he put his mouth to the orifice and let his laboring lungs gasp their eager fill of the cold blast roaring from the tanks. Then, air-hunger partially assuaged, he again held his breath, broke open the emergency locker, donned one of the space-suits always kept there, and opened its valves wide in order to flush out of his uniform any lingering trace of the lethal gas.

He then leaped back to his companion. Shutting off the air, he released a stream of pure oxygen, held her face in it, and made shift to force some of it into her lungs by compressing and releasing her chest against his own body. Soon she drew a spasmodic breath, choking and coughing, and he again changed the gaseous stream to one of pure air, speaking urgently as she showed signs of returning consciousness. Now, it was Clio Marsden's life.

"Stand up!" he snapped. "Hang onto this brace and keep your face in this air-stream until I get a suit around you! Got me?"

SHE nodded weakly, and, assured that she could now hold herself at the valve, it was the work of only a minute to encase her in one of the protective coverings. Then, as she sat upon a bench, recovering her strength, he flipped on the lifeboat's visiphone projector and shot its invisible beam up into the control room, where he saw space-armored figures furiously busy at the panels.

"Dirty work at the cross-roads!" he blazed to his captain, man to man—formality disregarded, as it so often was in the Triplanetary service. "There's skulduggery afoot somewhere in our primary air! Maybe that's the way they got those other two ships—pirates! Might have been a timed bomb—don't see how anybody could have stowed away down there through the inspections, and nobody but Franklin can neutralize the shield of the air-room—but I'm going to look around, anyway. Then I'll join you fellows up there."

"What was it?" the shaken girl asked. "I think that I remember your saying 'Vee-Two gas.' That's forbidden! Anyway, I owe you my life, Conway, and I'll never forget it—never. Thanks—but the others—how about all the rest of us?"

"It was Vee-Two, and it is forbidden," Costigan replied grimly, eyes fast upon the flashing plate, whose point or projection was now deep in the bowels of the vessel. "The penalty for using it or having it is death on sight. Gangsters and pirates use it, since they have nothing to lose, being on the death list already. As for your life, I haven't saved it yet—you may wish I'd let it ride before we get done. The others are too far gone for

oxygen—couldn't have brought even you around a few seconds later, quick as I got to you. But there's a sure antidote—we all carry it in a lock-box in our armor—and we all know how to use it, because crooks all use Vee-Two and so we're always expecting it. But since the air will be pure again in half an hour we'll be able to revive the others easily enough if we can get by with whatever is going to happen next. There's the bird that did it, right in the air-room! It's the chief engineer's suit, but that isn't Franklin that's in it. Some passenger—disguised—slugged the chief—took his suit and projectors—hole in duct—p-s-s-t! All washed out! Maybe that's all he was scheduled to do to us in this performance, but he'll do nothing else in this life!"

"Don't go down there!" protested the girl. "His armor is *so* much better than that emergency suit you are wearing, and he's got Mr. Franklin's Lewiston, besides!"

"Don't be an idiot!" he snapped. "We can't have a live pirate aboard—we're going to be altogether too busy with outsiders directly. Don't worry, I'm not going to give him a break. I'm taking a Standish and I'll rub him out like a blot. Stay right here until I come back after you," he commanded, and the heavy, vacuum insulated door of the lifeboat clanged shut behind him as he leaped out into the promenade.

Straight across the saloon he made his way, paying no attention to the inert forms scattered here and there. Going up to a blank wall, he manipulated an almost invisible dial set flush with its surface, swung a heavy door aside, and lifted out the Standish—a fearsome weapon. Squat, huge, and heavy, it resembled somewhat an overgrown machine rifle, but one possessing a thick, short telescope, with several opaque condensing lenses and parabolic reflectors. Laboring under the weight of the thing, he strode along corridors and clambered heavily down short stairways. Finally he came to the purifier room, and grinned savagely as he saw the greenish haze of light obscuring the door and walls—the shield was still in place; the pirate was still inside, still flooding with the terrible Vee-Two the *Hyperion's* primary air.

HE set his peculiar weapon down, unfolded its three massive legs, crouched down behind it and threw in a switch. Dull red beams of frightful intensity shot from the reflectors and sparks, almost of lightning proportions, leaped from the shielding screen under their impact. Roaring and snapping, the conflict went on for seconds; then, under the superior force of the Standish, the greenish radiance gave way. Behind it the metal of the door ran the gamut of color—red, yellow, blinding white—then literally exploded; molten, vaporized, burned away. Through the aperture thus made Costigan could plainly see the pirate in the space-armor of the chief engineer—an armor which was proof against rifle fire and which could reflect and neutralize for some little time even the terrific beam Costigan was employing. Nor was the pirate unarmed—a vicious flare of incandescence leaped from his Lewiston, to spend its force in spitting, crackling pyrotechnics against the ether-wall of the squat and monstrous Standish. But Costigan's infernal machine did not rely only upon vibratory destruction. At almost the first flash of the pirate's weapon the officer touched a trigger; there was a double report, ear-shattering in that narrowly confined space; and the pirate's body literally flew into mist as a half-kilogram shell tore through his armor and exploded. Costigan shut off his beam, and, with not the slightest softening of one hard lineament, stared around the air-room; making sure that no serious

damage had been done to the vital machinery of the air-purifier—the very lungs of the great space-ship.

Dismounting the Standish, he lugged it back up to the main saloon, replaced it in its safe and again set the combination lock. Thence to the lifeboat, where Clio cried out in relief as she saw that he was unhurt.

"Oh, Conway, I've been so afraid something would happen to you!" she exclaimed, as he led her rapidly upward toward the control roof. "Of course you . . . " she paused.

"Sure," he repliel, laconically. "Nothing to it. How do you feel—about back to normal?"

"All right, I think, except for being scared to death and just about out of control. I don't suppose that I'll be good for anything, but whatever I can do, count me in on."

"Fine—you may be needed, at that. Everybody's out, apparently, except those who, like me, had a warning and could hold their breath until they got to their suits."

"But how did you know what it was? You can't see it, nor smell it, nor anything."

"You inhaled a second before I did, and I saw your eyes. I've been in it before—and when you see a man get a jolt of that stuff just once, you never forget it. The engineers down below got it first, of course—it must have wiped them out. Then we got it in the saloon. Your passing out warned me, and luckily I had enough breath left to give the word. Quite a few of the fellows up above should have had time to get away—we'll see 'em all in the control room."

"I suppose that was why you revived me—in payment for so kindly warning you of the gas attack?" The girl laughed; shaky, but game.

"Something like that, probably," he answered, lightly. "Here we are—now we'll soon find out what's going to happen next."

In the control room they saw at least a dozen armored figures; not now rushing about, but seated at their instruments, tense and ready. Fortunate it was that Costigan—veteran of space as he was, though young in years—had been down in the saloon; fortunate that he had been familiar with that horrible outlawed gas; fortunate that he had had the presence of mind enough and sheer physical stamina enough to send his warning without allowing one paralyzing trace to enter his own lungs. Captain Bradley, the men on watch, and several other officers in their quarters or in the wardrooms—space-hardened veterans all—had obeyed instantly and without question the amplifiers' gasped command to "get tight." Exhaling or inhaling, their air-passages had snapped as that dread "Vee-Two" was heard, and they had literally jumped into their armored suits of space—flushing them out with volume after volume of unquestionable air; holding their breath to the last possible second, until their straining lungs could endure no more.

COSTIGAN waved the girl to a vacant bench, cautiously changed into his own armor from the emergency suit he had been wearing, and approached the captain.

"Anything in sight, sir?" he asked, saluting. "They should have started something before this."

"They've started, but we can't locate them. We tried to send out a general sector alarm, but that had hardly started when they blanketed our wave. Look at that!"

Following the captain's eyes, Costigan stared at the high powered set of the ship's operator. Upon the plate, instead of a moving, living, three-dimensional picture, there was a flashing glare of blinding white light; from the speaker,

instead of intelligible speech, was issuing a roaring, crackling stream of noise.

"It's impossible!" Bradley burst out, violently. "There's not a gram of metal inside the fourth zone—within a hundred thousand kilometers—and yet they must be close to send such a wave as that. But the Second thinks not—what do you think, Costigan?" The bluff commander, reactionary and of the old school as was his breed, was furious—baffled, raging inwardly to come to grips with the invisible and undetectable foe. Face to face with the inexplicable, however, he listened to the younger men with unusual tolerance.

"It's not only possible; it's quite evident that they've got something we haven't." Costigan's voice was bitter. "But why shouldn't they have? Service ships never get anything until it's been experimented with for years, but pirates and such always get the new stuff as soon as it's discovered. The only good thing I can see is that we got part of a message away, and the scouts can trace that interference out there. But the pirates know that, too—it won't be long now," he concluded, grimly.

He spoke truly. Before another word was spoken the outer screen flared white under a beam of terrific power, and simultaneously there appeared upon one of the lookout plates a vivid picture of the pirate vessel—a huge, black globe of steel, now emitting flaring offensive beams of force. Her invisibility lost, now that she had gone into action, she lay revealed in the middle of the first zone—at point-blank range.

INSTANTLY the powerful weapons of the *Hyperion* were brought to bear, and in the blast of full-driven beams the stranger's screens flamed incandescent. Heavy guns, under the recoil of whose fierce salvos, the frame of the giant globe trembled and shuddered, shot out their tons of high-explosive shell. But the pirate commander had known accurately the strength of the liner, and knew that her armament was impotent against the forces at his command. His screens were invulnerable, the giant shells were exploded harmlessly in mid-space, miles from their objective. And suddenly a frightened pencil of flame stabbed brilliantly from the black hulk of the enemy. Through the empty ether it tore, through the mighty defensive screens, through the tough metal of the outer and inner walls. Every ether-defence of the *Hyperion* vanished, and her acceleration dropped to a quarter of its normal value.

"Right through the battery room!" Bradley groaned. "We're on the emergency drive now. Our rays are done for, and we can't seem to put a shell anywhere near her with our guns!"

But ineffective as the guns were, they were silenced forever as a frightful beam of d e s t r u c t i o n stabbed relentlessly through the control room, whiffing out of existence the pilot, gunnery, and lookout panels and the men before them. The air rushed into space, and the suits of the three survivors bulged out into drumhead tightness as the pressure in the room decreased.

COSTIGAN pushed the captain lightly toward a wall, then seized the girl and leaped in the same direction.

"Let's get out of here, quick!" he cried, the miniature radio instruments of the helmets automatically taking up the duty of transmitting speech as the sound disks refused to function. "They can't see us—our ether wall is still up and their spy-sprays can't get through it from the outside, you know. They're working from blue-prints, and they'll probably take your desk next," and even as they bounded toward the door, now become the outer seal of an airlock, the annihilating ray tore through the space which

they had just quitted in their flight.

Through the airlock, down through several levels of passengers' quarters they hurried, and into a lifeboat, whose one doorway commanded the full length of the third lounge—an ideal spot, either for defense or for escape outward by means of the miniature cruiser. As they entered their retreat they felt their weight begin to increase. More and more force was applied to the helpless liner, until it was moving at normal acceleration.

"What do you make of that, Costigan?" asked the captain. "Tractor beams?"

"Apparently. They've got something, all right. They're taking us somewhere, fast. I'll go get a couple of Standishes, and another suit of armor—we'd better dig in," and soon the small room became a veritable fortress, housing as it did, those two formidable engines of destruction. Then the first officer made another and longer trip, returning with a complete suit of triplanetary space armor, exactly like those worn by the two men, but considerably smaller.

"Just as an added factor of safety, you'd better put this on, Clio—those emergency suits aren't good for much in a battle. I don't suppose that you ever fired a Standish, did you?"

"No, but I can soon learn how to do it," she replied, pluckily.

"Two is all that can work here at once, but you should know how to take hold in case one of us goes out. And while you're changing suits you'd better put on some stuff I've got here—Service special phones and detectors. Stick this little disk onto your chest with this bit of tape; low down, out of sight. Just under your wishbone is the best place. Take off your wrist-watch and wear this one *continuously*—never take it off for a second. Put on these pearls, and wear them all the time, too. Take this capsule and hide it against your skin, some place where it can't be found except by the most rigid search. Swallow it in an emergency—it goes down easily and works just as well inside as outside. It is the most important thing of all—you can get along with it alone if you lose everything else, but without that capsule the whole system's shot to pieces. With that outfit, if we should get separated, you can talk to us—we're both wearing 'em, although somewhat different forms. You don't need to talk loud—just a mutter will be enough. They're handy little outfits, almost impossible to find, and capable of a lot of things."

"THANKS, Conway—I'll remember that, too," Clio replied, as she turned toward the tiny locker to follow his instructions. "But won't the scouts and patrols be catching us pretty quick? The operator sent a warning."

"Afraid the ether's empty, as far as we're concerned. They could neutralize our detector screens, and the scouts' detectors are the same as ours."

Captain Bradley had stood by in silent astonishment during this conversation. His eyes had bulged slightly at Costigan's "we're both wearing 'em," but he had held his peace and as the girl disappeared a look of dawning comprehension came over his face.

"Oh, I see, sir," he said, respectfully—far more respectfully than he had ever before addressed a mere first officer. "Meaning that we both *will be* wearing them shortly, I assume. 'Service Specials'—but you didn't specify exactly *what* Service, did you?"

"Now that you mention it, I don't believe that I did," Costigan grinned.

"That explains several things about you—particlarly your recognition of Vee-Two and your uncanny control and speed of reaction. But aren't you. . . ."

"No," Costigan interrupted, positively. "This situation is apt to get altogether

too serious to overlook any bets. If we get away, I'll take them away from her and she'll never know that they aren't routine equipment in the Triplanetary Service. As for you, I know that you can and do keep your mouth shut. That's why I'm hanging this junk on you—I had a lot of stuff in my kit, but I flashed it all with the Standish, except what I brought in here for us three. Whether you think so or not, we're in a real jam—our chance of getting away is mightly close to zero. Now that I've gone this far, I might as well tell you that I don't believe these birds are pirates at all, in the ordinary sense of the word. And it may be possible that they're after me, but I don't think so—we've covered up too . . ."

He broke off as the girl came back, now to all appearances a small Triplanetary officer, and the three settled down to a long and eventless wait. Hour after hour they flew through the ether, but finally there was a lurching swing and an abrupt increase in their acceleration. After a short consultation Captain Bradley turned on the visiray set and, with the beam at its minimum power, peered cautiously downward, in the direction opposite to that in which he knew the pirate vessel must be. All three stared into the plate, seeing only an infinity of emptiness, marked only by the infinitely remote and coldly brilliant stars. While they stared into space a vast area of the heavens was blotted out and they saw, faintly illuminated by a peculiar blue luminescence, a vast ball—a sphere so large and so close that they seemed to be dropping downward toward it as though it were a world! They came to a stop—paused, weightless—a vast door slid smoothly aside—they were drawn *upward* through an airlock and floated quietly in the air above a small, but brightly-lighted and orderly city of metallic buildings! Gently the *Hyperion* was lowered, to come to rest in the embracing arms of a regulation landing cradle.

"Well, wherever it is, we're here," remarked Captain Bradley, grimly.

"And now the fireworks start," assented Costigan, with a questioning glance at the girl.

"Don't mind me," she answered his unspoken question. "I don't believe in surrendering, either."

"Right," and both men squatted down behind the ether-walls of their terrific weapons; the girl prone behind them.

They had not long to wait. A group of human beings—men and to all appearance Americans—appeared unarmed in the little lounge. As soon as they were well inside the room, Bradley and Costigan released upon them without compunction the full power of their frightful projectors. From the reflectors, through the doorway, there tore a concentrated double beam of pure destruction—but that beam did not reach its goal. Yards from the men it met a screen of impenetrable density. Instantly the gunners pressed their triggers and a stream of high-explosive shells issued from the roaring weapons. But shells, also, were futile. They struck the shield and vanished—vanished without exploding and without leaving a trace to show that they had ever existed.

Costigan sprang to his feet, but before he could launch his intended attack a vast tunnel appeared beside him—an annihilating ray had swept through the entire width of the liner, cutting instantly a smooth cylinder of emptiness. Air rushed in to fill the vacuum, and the three visitors felt themselves seized by invisible forces and drawn into the tunnel. Through it they floated, up to and over the buildings, finally slanting downward toward the door of a great high-powered structure. Doors opened before them and closed behind them, until at last they stood upright in a room which was evidently the

office of a busy executive. They faced a desk which, in addition to the usual equipment of the business man, carried a bewilderingly complete switchboard and instrument panel.

Seated impassively at the desk there was a gray man. Not only was he dressed entirely in gray, but his heavy hair was gray, his eyes were gray, and even his tanned skin seemed to give the impression of grayness in disguise. His overwhelming personality radiated an aura of grayness—not the gentle gray of the dove, but the resistless, driving gray of the super-dreadnaught; the hard, inflexible, brittle gray of the fracture of high-carbon steel.

"Captain Bradley, First Officer Costigan, Miss Marsden," the man spoke quietly, but crisply. "I had not intended you two men to live so long. That is a detail, however, which we will pass by for the moment. You may remove your suits."

Neither officer moved, but both stared back at the speaker unflinchingly.

"I am not accustomed to repeating instructions," the man at the desk continued; voice still low and level, but instinct with deadly menace. "You may choose between removing those suits and dying in them, here and now."

Costigan moved over to Clio and slowly took off her armor. Then, after a flashing exchange of glances and a muttered word, the two officers threw off their suits simultaneously and fired at the same instant; Bradley with his Lewiston, Costigan with a heavy automatic pistol whose bullets were explosive shells of tremendous power. But the man in gray, surrounded by an impenetrable wall of force, only smiled at the fusillade, tolerantly and maddeningly. Costigan leaped fiercely, only to be hurled backward as he struck that unyielding, invisible wall. A vicious beam snapped him back into place, the weapons were snatched away, and all three captives were held in their former positions.

"I permitted that, as a demonstration of futility," the gray man said, his hard voice becoming harder, "but I will permit no more foolishness. Now I will introduce myself. I am known as Roger. You probably have heard nothing of me yet but you will—if you live. Whether or not you two live depends solely upon yourselves. Being something of a student of men, I fear that you will both die shortly. Able and resourceful as you have just shown yourselves to be, you could be valuable to me, but you probably will not—in which case you shall, of course, cease to exist. That, however, in its proper time—you shall be of some slight service to me in the process of being eliminated. In your case, Miss Marsden, I find myself undecided between two courses of action; each highly desirable, but unfortunately mutually exclusive. Your father will be glad to ransom you at an exceedingly high figure, but, in spite of that fact, I may decide to keep you for—well, let us say for certain purposes."

"Yes?" Clio rose magnificently to the occasion. Fear forgotten, her courageous spirit flashed from her clear, young eyes and emanated from her slender, rounded young body, erect in defiance. "Since I am a captive, you can of course do anything you please with me up to a certain point—but no further, believe me!"

With no sign of having heard her outburst Roger pressed a button and a tall, comely woman appeared—a woman of indefinite age and of uncertain nationality.

"Show Miss Marsden to her apartment," he directed, and as the two women went out a man came in.

"The cargo is unloaded, sir," the newcomer reported. "The two men and the five women indicated have been taken to

the hospital," was the report of the man.

"Very well, dispose of the others in the usual fashion." The minion went out, and Roger continued, emotionlessly:

"Collectively, the other passengers may be worth a million or so, but it would not be worth while to waste time upon them.

"What are you, anyway?" blazed Costigan, helpless but enraged beyond caution. "I have heard of mad scientists who tried to destroy the earth, and of equally mad geniuses who thought themselves Napoleons capable of conquering even the Solar System. Whichever you are, you should know that you can't get away with it."

"I am neither. I am, however, a scientist, and I direct many other scientists. I am not mad. You have undoubtedly noticed several peculiar features of this place?"

"Yes, particularly the artificial gravity, which has always been considered impossible, and those screens. An ordinary ether-wall is opaque in one direction, and doesn't bar matter—yours are transparent both ways and something more than impenetrable to matter. How do you do it?"

"You could not understand them if I explained them to you, and they are merely two of our smaller developments. I have no serious designs upon the earth nor upon the Solar System, nor have I any desire to rule over, or to control the destinies of masses of futile and brainless men. I have, however, certain ends of my own in view. To accomplish my plans I require hundreds of millions in gold, other hundreds of millions in platinum and noble metal, and some five kilograms of the bromide of radium—all of which I shall take from the planets of this Solar System before I leave it. I shall take them in spite of the puerile efforts of the fleets of your Triplanetary League.

"This structure, floating in a planetary orbit, was designed by me and built under my direction. It is protected from meteorites by certain forces of my devising. It is undetectable and invisible—your detectors do not touch it and light-waves are bent around it without loss or distortion. I am discussing these points at such length so that you may realize exactly your position. As I have intimated, you can be of assistance to me if you will."

"NOW just what could you offer any *man* to make him join your outfit?" demanded Costigan, venomously.

"Many things." Roger's cold tone betrayed no emotion, no recognition of Costigan's open and bitter contempt. "I have under me many men, bound to me by many ties. Needs, wants, longings and desires differ from man to man, and I can satisfy practically any of them. Personally, I take delight in the society of young and beautiful women, and many men have that same taste; but there are other urges which I have found quite efficient. Greed, thirst for fame, longing for power, and so on, including many qualities usually regarded as 'noble.' And what I promise, I deliver. I demand only loyalty to me, and that only in certain things and for a relatively short period. In all else, my men do as they please. In conclusion, I can use you two conveniently, but I do not need you. Therefore you may choose now between my service and—the alternative."

"Exactly what is the alternative?"

"We will not go into that. Suffice it to say that it has to do with a minor research, which is not progressing satisfactorily. It will result in your extinction, and perhaps I should mention that that extinction will not be particularly pleasant."

"I say NO, you . . ." Bradley roared. He intended to give an unexpurgated classification, but was rudely interrupted.

"Hold on a minute!" snapped Costigan. "How about Miss Marsden?"

"She has nothing to do with this discussion," returned Roger, icily. "I do not bargain—in fact, I believe that I shall keep her for a time. She has it in mind to destroy herself, if I do not allow her to be ransomed, but she will find that door closed to her until I permit it to open."

"In that case, I string along with the Chief—take what he started to say about you and run it clear across the board for me!" barked Costigan.

"Very well. That decision was to be expected from men of your type." The gray man touched two buttons and two of his creatures entered the room. "Put these men into separate cells on the second level," he ordered. "Search them to the skin: all their weapons may not have been in their armor. Seal the doors and mount special guards, tuned to me here."

IMPRISONED they were, and carefully searched; but they bore no arms, and nothing had been said or thought of communicators. Even if such instruments could be concealed, Roger would detect their use instantly. At least, so would have run his thought had the subject entered his mind. But even Roger had no inkling of the possibility of Costigan's "Service Special" phones, detectors and spy-ray—instruments of minute size and of infinitesimal power, but yet instruments which, working as they were, below the level of the ether, were effective at great distances and caused no vibrations in the ether by which their use could be detected. And what could be more innocent than the regulation, personal equipment of every officer of space? The heavy goggles, the wrist-watch and its supplementary pocket chronometer, the flash-lamp, the automatic lighter, the sender, the money-belt?

All these items of equipment were examined with due care; but the cleverest minds of Triplanetary's Secret Service had designated those communicators to pass any ordinary search, however careful, and when Costigan and Bradley were finally locked into the designated cells, they still possessed their ultra-instruments.

CHAPTER II

In Roger's Planetoid

IN the hall Clio glanced around her wildly, her bosom heaving, eyes darting here and there, seeking even the narrowest avenue of escape. Before she could act, however, her body was clamped inflexibly, as though in a vise, and she struggled, motionless.

"It is useless to attempt to escape, or to do anything except what Roger wishes," the guide informed her somberly, snapping off the instrument in her hand and thus restoring to the thoroughly cowed girl her freedom of motion.

"His lightest wish is law," she continued as they walked down a long corridor. "The sooner you realize that you must do exactly as he pleases, in all things, the easier your life will be."

"But I wouldn't *want* to keep on living!" Clio declared, with a flash of spirit. "And I can *always* die, you know."

"You will find that you cannot," the passionless creature returned, monotonously. "If you do not yield, you will long and pray for death, but you will not die unless Roger wills it. I was like you once. I also struggled, and I became what I am now—whatever it is. Here is your apartment. You will stay here until Roger gives further orders concerning you."

The living automaton opened a door and stood silent and impassive, while Clio, staring at her in unutterable horror, shrank past her and into the sumptuously

furnished suite. The door closed soundlessly and utter silence descended as a pall. Not an ordinary silence, but the indescribable perfection of the absolute, complete absence of all sound. In that silence Clio stood motionless. Tense and rigid, hopeless, despairing, she stood there in that magnificent room, fighting an almost overwhelming impulse to scream. Suddenly she heard the cold voice of Roger, speaking from the empty air.

"You are over-wrought, Miss Marsden. You can be of no use to yourself or to me in that condition. I command you to rest; and, to insure that rest, you may pull that cord, which will establish about this room an ether wall: a wall cutting off even this my voice. . . ."

The voice ceased as she pulled the cord savagely and threw herself upon a divan in a torrent of gasping, strangling, but rebellious sobs. Then again came a voice, but not to her ears. Deep within her, pervading every bone and muscle, it made itself felt rather than heard.

"Clio?" it asked. "Don't talk yet. . . ."

"Conway!" she gasped in relief, every fiber of her being thrilled into new hope at the deep, well-remembered voice of Conway Costigan.

"Keep still!" he snapped. "Don't act so happy! He may have a spy-ray on you. He can't hear me, but he may be able to hear you. When he was talking to you you must have noticed a sort of rough, sandpapery feeling under that necklace I gave you? Since he's got an ether-wall around you the beads are dead now. If you feel anything like that under the wrist-watch, breathe deeply, twice. If you don't feel anything there, it's safe for you to talk, as loud as you please.

"I don't feel a thing, Conway!" she rejoiced. Tears forgotten, she was her old, buoyant self again. "So that wall *is* real, after all? I only about half believed it."

"Don't trust it too much, because he can cut it off from the outside any time he wants to. Remember what I told you: that necklace will warn you of any spy-ray in the ether, and the watch will detect anything below the level of the ether. It's dead now, of course, since our three phones are direct-connected; I'm in touch with Bradley, too. Don't be too scared; we've got a lot better chance that I thought we had."

"What? You don't mean it!"

"ABSOLUTELY. I'm beginning to think that maybe we've got something he doesn't know exists—our ultra-wave. Of course I wasn't surprised when his searchers failed to find our instruments, but it never occurred to me that I might have a clear field to use them in! I can't quite believe it yet, but I haven't been able to find any indication that he can even detect the bands we are using. I'm going to look around over there with my spy-ray . . . I'm looking at you now —feel it?"

"Yes, the watch feels that way, now."

"Fine! Not a sign of interference over here, either. I can't find a trace of ultra-wave—anything below ether-level, you know—anywhere in the whole place. He's got so much stuff that we've never heard of that I supposed of course he'd have ultra-wave, too; but if he hasn't, that gives us the edge. Well, Bradley and I've got a lot of work to do . . . Wait a minute, I just had a thought. I'll be back in about a second."

There was a brief pause, then the soundless, but clear voice went on:

"Good hunting! That woman that gave you the blue willies isn't alive—she's full of the prettiest machinery and communicators you ever saw!"

"Oh, Conway!" and the girl's voice broke in an engulfing wave of thanksgiving and relief. "It was so unutterably horrible, thinking of what must have happened to her and to others like her!"

"He's running a colossal bluff, I think. He's good, all right, but he lacks quite a lot of being omnipotent. But don't get too cocky, either. Plenty has happened to plenty of women here, and men too—and plenty may happen to us unless we put out a few jets. Keep a stiff upper lip, and if you want us, yell. 'Bye!"

THE silent voice ceased, the watch upon Clio's wrist again became an unobtrusive timepiece, and Costigan, in his solitary cell far below her tower room, turned his peculiarly goggled eyes toward other scenes. In his pockets his hands manipulated tiny controls, and through the lenses of those goggles Costigan's keen and highly-trained eyes studied every concealed detail of mechanism of the great globe, the while he planned what must be done. Finally, he took off the goggles and spoke in a low voice to Bradley, confined in another windowless room across the hall.

"I think I've got dope enough, Captain. I've found out where he put our armor and guns, and I've located all the main leads, controls, and generators. There are no ether-walls around us here, but every door is shielded, and there are guards outside our doors—one to each of us. They're robots, not men. That makes it harder, since they're undoubtedly connected direct to Roger's desk, and will give an alarm at the first hint of abnormal performance. We can't do a thing until he leaves his desk. See that black panel, a little below the cord-switch to the right of your door? That's the conduit cover. When I give you the word, tear that off and you'll see one red wire in the cable. It feeds the shield-generator of your door. Break that wire and join me out in the hall. Sorry I had only one of these ultra-wave spies, but once we're together it won't be so bad. Here's what I thought we could do," and he went over in detail the only course of action which his surveys had shown to be possible.

"There, he's left his desk!" Costigan exclaimed after the conversation had continued for almost an hour. "Now as soon as we find out where he's going, we'll start something . . . he's going to see Clio, the swine! This changes things, Bradley!" His hard voice was a curse.

"Somewhat!" blazed the captain. "I know how you two have been getting on all during the cruise. I'm with you, but what can we do?"

"We'll do something," Costigan declared grimly. "If he makes a pass at her I'll get him if I have to blow this whole sphere out of space, with us in it!"

"Don't do that, Conway." Clio's low voice, trembling but determined, was felt by both men and both gasped audibly: they had forgotten that there were three instruments in the circuit. "If there's a chance for you to get away and do anything about fighting him, don't mind me. Maybe he only wants to talk about the ransom, anyway."

"HE wouldn't talk ransom to *you*—he's going to talk something else entirely," Costigan gritted; then his voice changed suddenly. "But say, maybe it's just as well this way. They didn't find our specials when they searched us, you know, and we're going to do plenty of damage right soon now. Roger probably isn't a fast worker—more the cat-and-mouse type, I'd say—and after we get started he'll have something on his mind besides you. Think you can stall him off and keep him interested for about fifteen minutes?"

"I'm sure I can—I'll do *anything* to help us, or you, get away from this horrible . . . " Her voice ceased as Roger broke the ether-wall of her apartment and walked toward the divan upon which she crouched in wide-eyed, helpless, trembling terror.

"Get ready, Bradley!" Costigan directed tersely. "He's left Clio's etherwall off, so that any abnormal signals would be relayed to him from his desk—he knows that there's no chance of anyone disturbing him in *that* room. But I'm holding my beam on that switch—it's as good a conductor as metal—so that the wall is on, full strength. No matter what we do now, he can't get a warning. I'll have to hold the beam exactly on the switch, though, so you'll have to do the dirty work. Tear out that red wire and kill those two guards. You know how to kill a robot, don't you?"

"Yes—break his eye-lenses and his eardrums and he'll stop whatever he's doing and send out distress calls. . . . Got 'em both. Now what?"

"Open my door—the shield switch is to the right."

Costigan's door flew open and the Triplanetary captain leaped into the room.

"Now for our armor!" he cried.

"Not yet!" snapped Costigan. He was standing rigid, goggled eyes staring immovably at a spot upon the ceiling. "I can't move a millimeter until you've closed Clio's ether-wall switch. If I take this ray off it for a second we're sunk. Five floors up, straight ahead down a corridor—fourth door on right. When you're at the switch you'll feel my ray on your watch. Snap it up!"

"RIGHT!" and the captain leaped away at a pace to be equaled by few men of half his years.

Soon he was back, and after Costigan had tested the ether-wall of the "bridal suite" to make sure that no warning signal from his desk or his servants could reach Roger within it, the two officers hurried away toward the room in which their discarded space-armor had been stored.

"Too bad they don't wear uniforms," panted Bradley, short of breath from the many flights of stairs. "Might have helped some as disguise."

"I doubt it—with so many robots around, they've probably got signals that we couldn't understand, anyway. If we meet anybody it'll mean a battle. Hold it!" Peering through walls with his spy-ray, Costigan had seen two men approaching, blocking an intersecting corridor into which they must turn. "Two of 'em, a man and a robot—the robot's on your side. We'll wait here, right at the corner—when they round it, take 'em!" And Costigan put away his goggles in readiness for strife.

All unsuspecting, the two pirates came into view, and as they appeared the two officers struck. Costigan, on the inside, drove a short, hard right low into the human pirate's abdomen. The fiercely driven fist sank to the wrist into the soft tissues and the stricken man collapsed. But even as the blow landed, Costigan had seen that there was a third enemy, following close behind the two he had been watching, a pirate who was even then training a ray projector upon him. Reacting automatically, Costigan swung his unconscious opponent around in front of him, so that it was into that insensible body that the vicious ray tore, and not into his own. Crouching down into the smallest possible compass, he straightened his powerful body with the lashing force of a mighty steel spring, hurling the corpse straight at the flaming mouth of the projector. The weapon crashed to the floor and dead pirate and living went down in a heap. Upon that heap Costigan hurled himself, feeling for the enemy's throat. But the pirate had wriggled clear, and countered with a gouging thrust that would have torn out the eyes of a slower man, following it up instantly with a savage kick for the groin. No automaton this, geared and set to perform certain fixed duties with mechanical precision, but a lithe, strong man in hard training,

fighting with every foul trick known to his murderous ilk.

But Costigan was no tyro in the art of dirty fighting. Few indeed are the maiming tricks of foul combat unknown to even the rank and file of the highly efficient Secret Service of the Triplanetary League; and Costigan, a Sector Chief of that unknown organization, knew them all. Not for pleasure, sportsmanship, nor million-dollar purses do those secret agents use Nature's weapons. They come to grips only when it cannot possibly be avoided, but when they are forced to fight in that fashion they go into it with but one grim purpose—to kill, and to kill in the shortest possible space of time. Thus it was that Costigan's opening soon came. The pirate launched a particularly vicious kick, the dreaded "coup de sabot," which Costigan avoided by a lightning shift. It was a slight shift, barely enough to make the kicker miss, and two powerful hands closed upon that flying foot in midair like the sprung jaws of a bear-trap. Closed and twisted viciously, in the same fleeting instant. There was a shriek, smothered as a heavy boot crashed to its carefully predetermined mark: the pirate was out, definitely and permanently.

The struggle had lasted scarcely ten seconds, coming to its close just as Bradley finished blinding and deafening the robot. Costigan picked up the projector, again donned his spy-ray goggles, and the two hurried on.

"Nice work, Chief—it must be a gift to rough-house the way you do," Bradley exclaimed. "That's why you took the live one?"

"Practice helps some, too! I've been in brawls before, and I'm a lot younger and maybe some faster than you are," Costigan explained briefly, penetrant gaze rigidly to the fore as they ran along one corridor after another.

Several more guards, both living and mechanical, were encountered on the way, but they were not permitted to offer any opposition. Costigan saw them first. In the furious beam of the projector of the dead pirate they were riven into nothingness, and the two officers sped on to the room which Costigan had located from afar. The three suits of Triplanetary space armor had been sealed into a cabinet whose doors Costigan literally blew off with a blast of force, rather than consume time in tracing the power leads.

"I feel like something now!" Costigan, once more encased in his own armor, heaved a great sigh of relief. "Rough-and-tumble's all right with one or two, but that generator room is full of grief, and we won't have any too much stuff as it is. We've got to take Clio's suit along—we'll carry it down to the door of the power room, drop it there, and pick it up after we've wrecked the works."

Contemptuous now of possible guards, the armored pair strode toward the room which housed the pulsating heart of the immense fortress of space. Guards were encountered, and captains—officers who signaled frantically to their chief, since he alone could unleash the frightful forces at his command, and who profanely wondered at his unwonted silence—but the enemy beams were impotent against the mighty ether-walls of that armor; and the pirates, without armor in the security of their own planet as they were, vanished utterly in the ravening beams of the twin Lewistons. As they paused before the door of the power room, both men felt Clio's voice raised in her first and last appeal, an appeal wrung from her against her will by the extremity of her position.

"Conway! Hurry! Oh, hurry! I can't last much longer—good-bye, dear!" In the horror-filled tones both men read clearly the girl's dire extremity. Each saw plainly a happy, care-free young earth girl, upon her first trip into space,

locked inside an ether-wall with an over-brained, under-conscienced human machine—a super-intelligent but lecherous and unmoral mechanism of flesh and blood, acknowledging no authority, ruled by nothing save his own scientific drivings and the almost equally powerful urges of his desires and passions! She had fought with every resource at her command. She had wept and pleaded, she had stormed and raged, she had feigned submission and had played for time—and her torment had not touched in the slightest degree the merciless and gloating brain of the being who called himself Roger. Now his tantalizing, ruthless cat-play was done, the horrible gray-brown face was close to hers—she wailed her final despairing message to Costigan and attacked that hideous face with the fury of a tigress.

Costigan bit off a bitter imprecation. "Hold him just a second longer, sweetheart!" he cried, and the power room door vanished.

Through the great room the two Lewistons swept at full aperture and at maximum power, two rapidly opening fans of death and destruction. Here and there a guard, more rapid than his fellows, trained a futile projector—a projector whose magazine exploded at the touch of that frightful field of force, liberating instantaneously its thousands upon thousands of kilowatt-hours of stored-up energy. Through the delicately adjusted, complex mechanisms the destroying beams tore. At their touch armatures burned out, high-tension leads volatilized in crashing, high-voltage sparks, masses of metal smoked and burned in the path of vast forces now seeking the easiest path to neutralization, delicate instruments blew up, copper ran in streams like water. As the last machine subsided into a semi-molten mass of metal the two wreckers, each grasping a brace, felt themselves become weightless and knew that they had accomplished the first part of their program.

Costigan leaped for the outer door. His the task to go to Clio's aid. . . . Bradley would follow more slowly, bringing the girl's armor and taking care of any possible pursuit. As he sailed through the air he spoke.

"Coming, Clio! All right, girl?" Questioningly, half fearfully.

"All right, Conway." Her voice was almost unrecognizable, broken in retching agony. "When everything went crazy he . . . found out that the ether-wall was up . . . forgot all about me. He shut it off . . . and seemed to go crazy, too . . . he is floundering around like a wild man now. . . . I'm trying to keep . . . him from . . . going down-stairs."

"Good girl—keep him busy one minute more—he's getting all the warnings at once and wants to get back to his board. But what's the matter with you? Did he . . . hurt you, after all?"

"Oh, no; not that. But I'm sick—horribly sick. I'm falling. . . . I'm so dizzy I can scarcely see . . . my head is breaking up into little pieces. . . I just *know* I'm going to die, Conway! Oh . . . oh!"

"Oh, is *that* all!" In his sheer relief that they had been in time, Costigan did not think of sympathizing with Clio's very real present distress of mind and body. "I forgot that you're a ground-gripper—that's just a little touch of space-sickness. It'll wear off directly. . . . All right, I'm coming! Let go of him and get as far away from him as you can!"

He was now in the street. Perhaps two hundred feet distant and a hundred feet above him was the tower room in which were Clio and Roger. He sprang directly toward its large window, and as he floated "upward" he corrected his course and accelerated his pace by firing backward at various angles with his heavy

service pistol, uncaring that at the point of impact of each of those shells a small blast of destruction erupted. He missed the window a trifle, but that did not matter—his flaming Lewiston opened a way for him, partly through the window, partly through the wall. As he soared through the opening he trained projector and pistol upon Roger, now almost to the door, noticing as he did so that Clio was clinging convulsively to a lamp-bracket upon the wall. Door and wall vanished in the Lewiston's terrific beam, but the pirate stood unharmed. Neither ravening ray nor explosive shell could harm him—he had snapped on the protective shield whose generator was always upon his person.

But Roger, while not exactly a ground-gripper, did not know how to handle himself without weight; whereas Costigan, given six walls against which to push, was even more efficient in weightless combat than when handicapped by the force of gravitation. Keeping his projector upon the pirate, he seized the first club to hand—a long, slender pedestal of metal—and launched himself past the pirate chief. With all the momentum of his mass and velocity and all the power of his mighty right arm he swung the bar at the pirate's head. That fiercely driven mass of metal should have taken Roger's head from his shoulders, but it did not. That shield of force was utterly rigid and impenetrable; the only effect of the frightful blow was to set him spinning, end over end, like the flying baton of an acrobatic drum-major. As the spinning form crashed against the opposite wall of the room, Bradley floated in, carrying Clio's armor. Without a word the captain loosened the helpless girl's grip upon the bracket and encased her in the suit. Then, supporting her at the window, he held his Lewiston upon the captive's head while Costigan propelled him toward the opening. Both men knew that Roger's shield of force must be threatened every instant—that if he were allowed to release it he probably would bring to bear a hand-weapon even superior to their own.

Braced against the wall, Costigan sighted along Roger's body toward the most distant point of the lofty dome of the artificial planet and gave him a gentle push. Then, each grasping Clio by an arm, the two officers shoved mightily with their feet and the three armored forms darted away toward their only hope of escape—an emergency boat which could be launched through the shell of the great globe. To attempt to reach the *Hyperion* and to escape in one of her lifeboats would have been useless; they could not have forced the great gates of the main airlocks and no other exits existed. As they sailed onward through the air, Costigan keeping the slowly-floating form of Roger enveloped in his beam, Clio began to recover.

"Suppose they get their gravity fixed?" she asked, apprehensively. "And they're raying us and shooting at us!"

"They may have fixed it already. They undoubtedly have spare parts and duplicate generators, but if they turn it on the fall will kill Roger too, and he wouldn't like that. They'll have to get him down with an airship, and they know that we'll get them as fast as they come up. They can't hurt us with hand-weapons, and before they can bring up any heavy stuff they'll be afraid to use it, because we'll be too close to their shell.

"I wish we could have brought Roger along," he continued, savagely, to Bradley. "But you were right, of course—it'd be altogether too much like a rabbit capturing a wildcat. My Lewiston's about done right now, and there can't be much left of yours—what he'd do to us would be a sin and a shame."

Now at the great wall, the two men heaved mightily upon a lever, the gate of

the emergency port swung slowly open, and they entered the miniature cruiser of the void. Costigan, familiar with the mechanism of the craft from careful study from his prison cell, manipulated the controls. Through gate after massive gate they went, until finally they were out in open space, shooting toward distant Tellus at the maximum acceleration of which their small craft was capable.

Costigan cut the other two phones out of circuit and spoke, his attention fixed upon some extremely distant point.

"Samms!" he called, sharply. "Costigan. We're out . . . all right . . . yes . . . sure . . . absolutely . . . you tell 'em, Sammy; I've got company here."

Through the sound-disks of their helmets the girl and the captain had heard Costigan's share of the conversation. Bradley stared at his erstwhile first officer in amazement, and even Clio had often heard that mighty, half-mythical name. Surely that bewildering young man must rank high, to speak so familiarly to Virgil Samms, the all-powerful head of the space-pervading Secret Service of the Triplanetary League!

"You've turned in a general call-out," Bradley stated, rather than asked.

"Long ago—I've been in touch right along," Costigan answered. "Now that they know what to look for and know that ether-wave detectors are useless, they can find it. Every vessel in seven sectors, clear down to the scout patrols, is concentrating on this point, and the call is out for all battleships and cruisers afloat. There are enough operatives out there with ultra-waves to locate that globe, and once they spot it they'll point it out to all the other vessels."

"But how about the other prisoners?" asked the girl. "They'll all be killed, won't they?"

"Hard telling," Costigan shrugged. "Depends on how things turn out. We lack a lot of being safe ourselves yet, and it's my personal opinion that there's going to be a real war."

"What's worrying me mostly is our own chance," Bradley assented. "They will chase us, of course."

"Sure, and they'll have more speed than we have. Depends on how far away the nearest Triplanetary vessels are. Anyway, we've done everything we can do—it's in the laps of the gods now."

Silence fell, and Costigan cut in Clio's phone and came over to the seat upon which she was reclining, white and stricken—worn out by the horrible and terrifying ordeals of the last few hours. As he seated himself beside her she blushed vividly, but her deep blue eyes met his gray ones steadily.

"Clio, I . . . we . . . you . . . that is," he flushed hotly and stopped. This secret agent, whose clear, keen brain no physical danger could cloud; who had proved over and over again that he was never at a loss in any emergency, however desperate—this quick-witted officer floundered in embarrassment like any schoolboy, but continued, doggedly: "I'm afraid that I gave myself away back there, but . . . "

"We gave ourselves away, you mean," she filled in the pause. "I did my share, but I won't hold you to it if you don't want—but I *know* that you love me, Conway!"

"*Love* you!" The man groaned, his face lined and hard, his whole body rigid. "That doesn't half tell it, Clio. You don't need to hold me—I'm held for life. There never was a woman who meant anything to me before, and there never will be another. You're the only woman that ever existed. It isn't that. Can't you see that it's impossible?"

"Of course I can't—it isn't impossible, at all." She released her finger shields, four hands met and tightly clasped, and her low voice thrilled with feeling as she went on: "You love me and I love you. That is all that matters."

"I wish it were," Costigan returned bitterly, "but you don't know what you'd be letting yourself in for. It's who and what you are and who and what I am that's eating me. You, Clio Marsden, Curtis Marsden's daughter. Nineteen years old. You think you've been places and done things. You haven't. You haven't seen or done anything—you don't know what it's all about. And who am I to love a girl like you? A homeless space-flea who hasn't been on any planet three weeks in three years. A hard-boiled egg. A trouble-shooter and a brawler by instinct and training. A sp . . ." He bit off the word and went on quickly: "Why, you don't know me at all, and there's a lot of me that you never *will* know—that I can't let you know! You'd better lay off me, girl, while you can. It'll be best for you, believe me."

"But I can't Conway, and neither can you," the girl answered softly, a glorious light in her eyes. "It's too late for that. On the ship it was just another of those things, but since then we've come really to know each other, and we're sunk. The situation is out of control, and we both know it—and neither of us would change it if we could, and you know that, too. I don't know very much, I admit, but I do know what you thought you'd have to keep from me, and I admire you all the more for it. We all honor the Service, Conway dearest—it is only you men who have made and are keeping the Three Planets fit places to live in—and I know that Virgil Samms' chief lieutenant would have to be a man in four thousand million . . ."

"What makes you think that?" he demanded sharply.

"You told me so yourself, indirectly. Who else in the known Universe could possibly call him 'Sammy'? You are hard, of course, but you must be so—and I never did like soft men, anyway. And you brawl in a good cause. You are very much a *man,* my Conway; a real, *real* man, and I love you! Now, if they catch us, all right—we'll die together, at least!" she finished, passionately.

"You're right, sweetheart, of course," he admitted. "I don't believe that I *could* really let you let me go, even though I know you ought to," and their hands locked together even more firmly than before. "If we ever get out of this jam I'm going to kiss you, but this is no time to be taking off your helmet. In fact, I'm taking too many chances with you in keeping your finger shields off. Snap 'em on, Clio mine; the pirates ought to be getting fairly close by this time."

Hands released and armor again tight, Costigan went over to join Bradley at the control board.

"How're they coming, Captain?" he asked.

"Not so good. Quite a ways off yet. At least an hour, I'd say, before a cruiser can get within range."

"I'll see if I can locate any of the pirates chasing up. If I do, it'll be by accident; this little spy-ray isn't good for much except close work. I'm afraid the first warning we'll have will be when they take hold of us with a beam or spear us with a ray. Probably a beam, though; this is one of their emergency lifeboats and they wouldn't want to destroy it unless they have to. Also, I imagine that Roger wants us alive pretty badly. He has unfinished business with all three of us, and I can well believe that his 'not particularly pleasant extinction' will be even less so after the way we rooked him."

"I want you to do me a favor, Conway." Clio's face was white with horror at the thought of facing again that unspeakable creature of gray. "Give me a gun or something, please. I don't want him to touch me again while I'm alive."

"He won't," Costigan assured her, narrow of eye and grim of jaw. He was,

as she had said, hard. "But you don't want a gun. You might get nervous and use it too soon. I'll take care of you at the last possible moment, because if he gets hold of us we won't stand a chance of getting away again."

For minutes there was silence, Costigan surveying the ether in all directions with his ultra-wave device. Suddenly he laughed, deeply and with real enjoyment, and the others stared at him in surprise.

"No, I'm not crazy," he told them. "This is really funny; it had never occurred to me that all these pirate ships are invisible to any ether wave as long as they're using power. I can see them, of course, with this sub-ether spy, but they can't see us! I knew that they should have overtaken us before this. I've finally found them. They've passed us, and are now tacking around, waiting for us to cut off our power for a minute so that they can see us! They're heading right into the Fleet—they think they're safe, of course, but what a surprise they've got coming to them!"

But it was not only the pirates who were to be surprised. Long before the pirate ship had come within extreme visibility range of the Triplanetary Fleet, it lost its invisibility and was starkly outlined upon the lookout plates of the three fugitives. For a few seconds the pirate craft seemed unchanged, then it began to glow redly, with a red that seemed to become darker as it grew stronger. Then the sharp outlines blurred, puffs of air burst outward, and the metal of the hull became a viscous, fluid-like something, flowing away in a long, red streamer into seemingly empty space. Costigan turned his ultra-gaze into that space and saw that it was actually far from empty. There lay a vast something, formless and indefinite even to his sub-ethereal vision; a something into which the viscid stream of transformed metal plunged. Plunged, and vanished.

Powerful interference blanketed his ultra-wave and howled throughout his body; but in the hope that some part of his message might get through he called Samms, and calmly and clearly he narrated everything that had just happened. He continued his crisp report, neglecting not the smallest detail, while their tiny craft was drawn inexorably toward a redly impermeable veil; continued it until their lifeboat, still intact, shot through that veil and he found himself unable to move. He was conscious, he was breathing normally, his heart was beating; but not a voluntary muscle would obey his will.

CHAPTER III

Fleet Against Planetoid

ONE of the newest and fleetest of the Law Enforcement Vessels of the Triplanetary League, the heavy cruiser *Chicago*, of the North American Division of the Tellurian Contingent, plunged stolidly through interplanetary vacuum. For five long weeks she had patrolled her allotted volume of space. In another week she would report back to the city whose name she bore, where her space-weary crew, worn by their long "trick" in the awesomely oppressive depths of the limitless void, would enjoy to the full their fortnight of refreshing planetary leave.

She was performing certain routine tasks—charting meteorites, watching for derelicts and other obstructions to navigation, checking in constantly with all scheduled space-ships in case of need, and so on—but primarily she was a warship. She was a mighty engine of destruction, hunting for the unauthorized vessels of whatever power or planet it was, that had not only defied the Triplanetary League, but were evidently attempting to overthrow it; attempting to

plunge the Three Planets back into the ghastly sink of bloodshed and destruction from which they had so recently emerged. Every space-ship within range of her powerful detectors was represented by two brilliant, slowly moving points of light; one upon a great micrometer screen, the other in the "tank"—the immense, three-dimensional, minutely cubed model of the entire Solar System.

A brilliantly intense red light flared upon a panel and a bell clanged brazenly the furious signals of the sector alarm. Simultaneously a speaker roared forth its message of a ship in dire peril.

"Sector alarm! N. A. T. *Hyperion* gassed with Vee-Two. Nothing detectable in space, but . . . "

The half-uttered message was drowned out in a crackling roar of meaningless noise, the orderly signals of the bell became a hideous clamor, and the two points of light which had marked the location of the liner disappeared in widely spreading flashes of the same high-powered interference. Observers, navigators, and control officers were alike dumfounded. Even the captain, in the shell-proof, shock-proof, and doubly ray-proof retreat of his conning compartment, was equally at a loss. No ship or thing could *possibly* be close enough to be sending out interfering waves of such tremendous power—yet there they were!

"Maximum acceleration, straight for the point where the *Hyperion* was when her tracers went out," the captain ordered, and through the fringe of that widespread interference he drove a solid beam, reporting concisely to G. H. Q. Almost instantly the emergency call-out came roaring in—every vessel of the Sector, of whatever class or tonnage, was to concentrate upon the point in space where the ill-fated liner had last been known to be.

Hour after hour the great globe drove on at maximum acceleration, captain and every control officer alert and at high tension. But in the Quartermaster's Department, deep down below the generator rooms, no thought was given to such minor matters as the disappearance of a *Hyperion*. The inventory did not balance, and two Q. M. privates were trying, profanely and without much success, to find the discrepancy.

"Charged cells for model DF Lewistons, none requisitioned, on hand eighteen thous . . . ." The droning voice broke off short in the middle of a word and the private stood rigid, in the act of reaching for another slip, every faculty concentrated upon something imperceptible to his companion.

"Come on, Cleve—snap it up!" the second commanded, but was silenced by a vicious wave of the listener's hand.

"What!" the rigid one exclaimed. "Reveal ourselves! Why, it's . . . Oh, all right. . . . Oh, that's it. . . . Uh-huh. . . . I see. . . . Yes, I've got it solid. Maybe I'll see you again some time. If not, so long!"

The inventory sheets fell unheeded from his hand, and his fellow private stared after him in amazement as he strode over to the desk of the officer in charge. That officer also stared as the hitherto easy-going and gold-bricking Cleve saluted briskly, showed him something flat in the palm of his left hand, and spoke.

"I've just got some of the funniest orders ever put out, Lieutenant"—his voice was low and intense—"but they came from 'way, 'way up. I'm to join the brass hats in the Center. You'll know about it directly, I imagine. Cover me up as much as you can, will you?" And he was gone.

Unchallenged he made his way to the control room, and his curt "urgent report for the Captain" admitted him there without question. But when he approached the sacred precincts of the Cap-

tain's own and inviolate room, he was stopped in no uncertain fashion by no less a personage than the Officer of the Day.

". . . and report yourself under arrest immediately!" the O. D. concluded his brief but pointed speech.

"You were right in stopping me, of course," the intruder conceded, unmoved. "I wanted to get in there without giving everything away, if possible, but it seems that I can't. Well, I've been ordered by Virgil Samms to report to the Captain, at once. See this? Touch it!" He held out a flat, insulated disk, cover thrown back to reveal a tiny golden meteor, at the sight of which the officer's truculent manner altered markedly.

"I've heard of them, of course, but I never saw one before," and the officer touched the shining symbol lightly with his finger, jerking backward involuntarily as there shot through his whole body a thrilling surge of power, shouting into his very bones an unpronounceable syllable—the password of the Secret Service. "Genuine or not, it gets you to the Captain. He'll know, and if it's a fake you'll be breathing space in five minutes."

Projector at the ready, the Officer of the Day followed Cleve into the Holy of Holies. There the grizzled four-striper touched the golden meteor lightly, then drove his piercing gaze deep into the unflinching eyes of the younger man. But that captain had won his high rank neither by accident nor by "pull"—he understood at once.

"It *must* be an emergency," he growled, half-audibly, still staring at his lowly Q.-M. clerk, "to make Samms uncover his whole organization." He turned and curtly dismissed the wondering O. D. Then: "All right! Out with it!"

"Serious enough so that every one of us afloat has just received orders to reveal himself to his commanding officer and to anyone else, if necessary to reach that officer at once—orders never before issued. The enemy have been located. They have built a base, and have ships better than our best. Base and ships cannot be seen nor detected by any ether wave. However, the Service has been experimenting for years with a new type of communicator beam; and, while pretty crude yet, it was given to us when the *Dione* went out without leaving a trace. One of our men was in the *Hyperion,* managed to stay alive, and has been sending data. I am instructed to attach my new phone set to one of the universal plates in your conning room, and to see what I can find."

"Go to it!" The captain waved his hand and the operative bent to his task.

"Commanders of all vessels of the Fleet!" The Headquarters speaker, receiver sealed upon the wave-length of the Admiral of the Fleet, broke the long silence. "All vessels in sectors L to R, inclusive, will interlock location signals. Some of you have received, or will receive shortly, certain communications from sources which need not be mentioned. Those commanders will at once send out red K4 screens. Vessels so marked will act as temporary flagships. Unmarked vessels will proceed at maximum to the nearest flagship, grouping about it in regulation squadron cone in order of arrival. Squadrons most distant from objective point designated by flagship observers will proceed toward it at maximum; squadrons nearest it will decelerate or reverse velocity—that point must not be approached until full Fleet formation has been accomplished. Heavy and Light Cruisers of all other sectors inside the orbit of Mars . . ." the orders went on, directing the mobilization of the stupendous forces of the League, so that they would be in readiness in the highly improbable event of the failure of the massed power of seven sectors to reduce the pirate base.

In those seven sectors perhaps a dozen vessels threw out enormous spherical screens of intense red light, and as they did so their tracer points upon all the interlocked lookout plates also became ringed about with red. Toward those crimson markers the pilots of the unmarked vessels directed their courses at their utmost power; and while the white lights upon the lookout plates moved slowly toward and clustered about the red ones the ultra-instruments of the Secret Service operatives were probing into space, sweeping the neighborhood of the computed position of the pirate's stronghold.

But the object sought was so far away that the small spy-ray sets of the Secret Service men, intended as they were for close-range work, were unable to make contact with the invisible planetoid for which they were seeking. In the captain's sanctum of the *Chicago,* the operative studied his plate for only a minute or two, then shut off his power and fell into a brown study, from which he was rudely aroused.

"Aren't you even going to *try* to find them?" demanded the captain.

"No," Cleve returned shortly. "No use—not half enough power or control. I'm trying to think . . . maybe . . . say, Captain, will you please have the Chief Electrician and a couple of radio men come in here?"

They came, and for hours, while the other ultra-wave men searched the apparently empty ether with their ineffective beams, the three technical experts and the erstwhile Quartermaster's clerk labored upon a huge and complex ultra-wave projector—the three blindly and with doubtful questions; the one with sure knowledge at least of what he was trying to do. Finally the thing was done, the crude but efficient graduated circles were set, and the tubes glowed redly as their solidly massed output was driving into a tight beam of ultra-vibration. "There it is, sir," Cleve reported, after some ten minutes of delicate manipulation, and the vast structure of the miniature world flashed into being upon his plate. "You may notify the fleet—coordinates H 11.62, RA 124-31-16, and Dx about 173.2."

The report made and the assistants out of the room, the captain turned to the observer and saluted gravely.

"We have always known, sir, that the Service had *men;* but I had no idea that any one man could possibly do, on the spur of the moment, what you have just done—unless that man happened to be Lyman Cleveland."

"Oh, it doesn't . . . " the observer began, but broke off, muttering unintelligibly at intervals; then swung the visiray beam toward the earth. Soon a face appeared upon the plate, the keen but careworn face of Virgil Samms!

"Hello, Lyman." His voice came clearly from the speaker, and the Captain gasped—his ultra-wave observer and sometime clerk was Lyman Cleveland himself, probably the greatest living expert in beam transmission! "I knew that you'd do something, if it could be done. How about it—can the others install similar sets on their ships? I'm betting that they can't."

"Probably not," Cleveland frowned in thought. "This is a patchwork affair, made of gunny-sacks and hay-wire. I'm holding it together by main strength and awkwardness, and even at that it's apt to go to pieces any minute."

"Can you rig it up for photography?"

"I think so. Just a minute—yes, I can. Why?"

"Because there's something going on out there that neither we nor the so-called pirates know anything about. The Admiralty seems to think that it's the Jovians again, but we don't see how it can be—if it is, they have developed a lot of

stuff that none of our agents has even suspected," and he recounted briefly what Costigan had reported to him, concluding: "Then there was a burst of interference—on the *ultra-band,* mind you—and I've heard nothing from him since. Therefore I want you to stay out of the battle entirely. Stay as far away from it as you can and still get good pictures of everything that happens. I will see that orders are issued to the *Chicago* to that effect."

"But listen . . ."

"Those are orders!" snapped Samms. "It is of the utmost importance that we know every detail of what is going to happen. The answer is pictures. The only possibility of obtaining pictures is that machine you have just developed. If the fleet wins, nothing will be lost. If the fleet loses—and I am not half as confident of success as the Admiral is—the *Chicago* doesn't carry enough power to decide the issue, and we will have the pictures to study, which is all-important. Besides, we've probably lost Conway Costigan to-day, and we don't want to lose *you,* too."

Cleveland remained silent, pondering this startling news, but the grizzled Captain, veteran of the Fourth Jovian War that he was, was not convinced.

"We'll blow them out of space, Mr. Samms!" he declared.

"You just think you will, Captain. I have suggested, as forcibly as possible, that the general attack be withheld until after a thorough investigation is made, but the Admiralty will not listen. They see the advisability of withdrawing a camera ship, but that is as far as they will go."

"And that's plenty far enough!" growled the *Chicago's* commander, as the beam snapped off. "Mr. Cleveland, I don't like the idea of running away under fire, and I won't do it without direct orders from the Admiral."

"Of course you won't—that's why you are going. . . ."

He was interrupted by a voice from the Headquarters speaker. The captain stepped up to the plate and, upon being recognized, he received the exact orders which had been requested by the Chief of the Secret Service—now not as secret as it had been heretofore.

Thus it was that the *Chicago* reversed her acceleration, cut off her red screen, and fell rapidly behind, while the vessels following her in their loose cone formation shot away toward another crimson-flaring leader. Farther and farther back she dropped, back to the limiting range of the ultra-cameras upon which Cleveland and his highly trained assistants were furiously and unremittingly at work. And during all this time the forces of the seven sectors had been concentrating. The pilot vessels, with their flaming red screens, each followed by a cone of space-ships, drew closer and closer together, approaching the *Fearless*—the British super-dreadnaught which was to be the flagship of the Fleet—the mightiest and heaviest space-ship which had yet lifted her stupendous mass into the ether.

Now, systematically and precisely, the great Cone of Battle was coming into being; a formation developed during the Jovian Wars while the forces of the Three Planets were fighting in space for their very civilizations' existence, and one never used since the last space-fleets of Jupiter's murderous hordes had been wiped out.

The mouth of that enormous hollow cone was a ring of scout patrols, the smallest and most agile vessels of the fleet. Behind them came a somewhat smaller ring of light cruisers, then rings of heavy cruisers and of light battleships, and finally of heavy battleships. At the apex of the cone, protected by all the other vessels of the formation and in best position to direct the battle, was the

flagship. In this formation every vessel was free to use her every weapon, with a minimum of danger to her sister ships; and yet, when the gigantic main projectors were operated along the axis of the formation, from the entire vast circle of the cone's mouth there flamed a cylindrical field of force of such intolerable intensity that in it no conceivable substance could endure for a moment!

The artificial planet of metal was now close enough so that it was visible to the ultra-vision of the Secret Service men, so plainly visible that the warships of the pirates were seen issuing from the enormous air-locks. As each vessel shot out into space it sped straight for the approaching fleet without waiting to go into any formation—gray Roger believed his structures invisible to Triplanetary eyes, thought that the presence of the fleet was the result of mathematical calculations, and was convinced that his mighty vessels of the void would destroy even that vast fleet without themselves becoming known. He was wrong. The foremost globes were allowed actually to enter the mouth of that conical trap before an offensive move was made. Then the vice-admiral in command of the fleet touched a button, and simultaneously every generator in every Triplanetary vessel burst into furious activity. Instantly the hollow volume of the immense cone became a coruscating hell of resistless energy, an inferno which, with the velocity of light, extended itself into a far-reaching cylinder of rapacious destruction. Ether-waves they were, it is true, but vibrations driven with such fierce intensity that the screens of deflection surrounding the pirate vessels could not handle even a fraction of their awful power. Invisibility lost, their defensive screens flared briefly; but even the enormous force backing Roger's inventions, greater far than that of any single Triplanetary vessel, could not hold off the incredible violence of the massed attack of the hundreds of mighty vessels composing the Fleet. Their defensive screens flared briefly, then went down; their great spherical hulls first glowing red, then shining white, then in a brief moment exploding into flying masses of red hot, molten, and gaseous metal.

A full two-thirds of Roger's force was caught in that raging, incandescent beam; caught and obliterated: but the remainder did not retreat to the planetoid. Darting out around the edge of the cone at a stupendous acceleration, they attacked its flanks and the engagement became general. But now, since enough beams were kept upon each ship of the enemy so that invisibility could not be restored, each Triplanetary war vessel could attack with full efficiency. Magnesium flares and star-shells illuminated space for a thousand miles, and from every unit of both fleets was being hurled every item of solid, explosive, and vibratory destruction known to the highly scientific warfare of that age. Offensive beams, rods and daggers of frightful power struck and were neutralized by defensive screens equally capable; the long range and furious dodging made ordinary solid or high-explosive projectiles useless; and both sides were filling all space with such a volume of blanketing frequencies that such radio-dirigible torpedoes as were launched could not be controlled, but darted madly and erratically hither and thither, finally to be exploded harmlessly in mid-space by the touch of some fiercely insistent, probing beam of force.

Individually, however, the pirate vessels were far more powerful than those of the fleet, and that superiority soon began to make itself felt. The power of the smaller ships began to fail as their accumulators became discharged under the awful drain of the battle, and vessel after vessel of the Triplanetary fleet was hurled into nothingness by the con-

centrated blasts of the pirates' rays. But the Triplanetary forces had one great advantage. In furious haste the Secret Service men had been altering the controls of the radio-dirigible torpedoes, so that they would respond to ultra-wave control; and, few in number though they were, each was highly effective.

A hard-eyed observer, face almost against his plate and both hands and both feet manipulating controls, hurled the first torpedo. Propelling rockets viciously aflame, it twisted and looped around the incandescent rods of destruction so thickly and starkly outlined, under perfect control; unaffected by the hideous distortion of all ether-borne signals. Through a pirate screen it went, and under the terrific blast of its detonation one entire panel of the stricken battleship vanished, crumpled and broken. It should have been out, cold—but, to the amazement of the observers, it kept on fighting with scarcely lessened power! Three more of the frightful space-bombs had to be exploded in it—it had to be reduced to junk—before its terrible rays went out; Not a man in that great fleet had even an inkling of the truth; that those great vessels, those terrible engines of destruction, did not contain a single living creature: that they were manned and fought by automatons; robots controlled by keen-eyed, space-hardened veterans inside the planetoid so distant by means of tight, interference-proof communicator beams!

But they were to receive an inkling of it. As ship after ship of the pirate fleet was blown to pieces, Roger realized that his navy was beaten, and forthwith all his surviving vessels darted toward the apex of the cone, where the heaviest battleships were stationed. There each hurled itself upon a Triplanetary warship, crashing to its own destruction, but in that destruction insuring the loss of one of the heaviest vessels of the enemy. Thus passed the *Fearless,* and twenty of the finest space-ships of the fleet as well. But the ranking offcer assumed command, the war-cone was re-formed, and, yawning maw to the fore, the great formation shot toward the pirate stronghold, now near at hand. It again launched its stupendous cylinder of annihilation, but even as the mighty defensive screens of the planetoid flared into incandescently furious defense, the battle was interrupted and pirates and Triplanetarians learned alike that they were not alone in the ether.

Space became suffused with a redly impenetrable opacity, and through that indescribable pall there came reaching huge arms of force incredible; writhing, coruscating beams of power which glowed a baleful, although almost imperceptible, red. A vessel of unheard-of armament and power, hailing from a distant solar system of the Galaxy, had come to rest in that space. For months her commander had been investigating sun after sun in quest of one precious substance. Now his detectors had found it; and, feeling neither fear of Triplanetarian weapons nor reluctance to sacrifice those thousands of Triplanetarian lives, he was about to take it!

END OF PART I

Master of Dreams

By HARL VINCENT

In this story, Harl Vincent takes what our readers may consider to be a new departure. He brings us into the world of human thought and tells of how the brain can be governed by outside and independent causes. It is quite mysterious and comes to a very startling end. It is a story of psychical interest in part, and the science of radio transmission also comes in, making it a very interesting combination.

Illustrated by MOREY

CHAPTER I

Strangers Meet

WHEN four men are seen after ten P.M. at one of the round tables in George and Tom's, there is quite apt to be a session of reminiscent yarn-spinning if not the telling of actual "whoppers." And this does not imply, necessarily, that there has been too much indulgence in the illegal beverages for which George and Tom are as famous as for the most excellent food which comes out of their kitchen.

The place is one of those better class Volstead-era restaurants in New York's forties and is in an old brownstone front with iron-grilled entrance a few steps below the street level. It is frequented mainly by celebrities and near-celebrities. Stage folk, painters, writers, explorers, débutantes and divorcées, prodigal sons of families high in the roster of the Four Hundred, politicians and professors—all come here to eat and drink, to see and be seen.

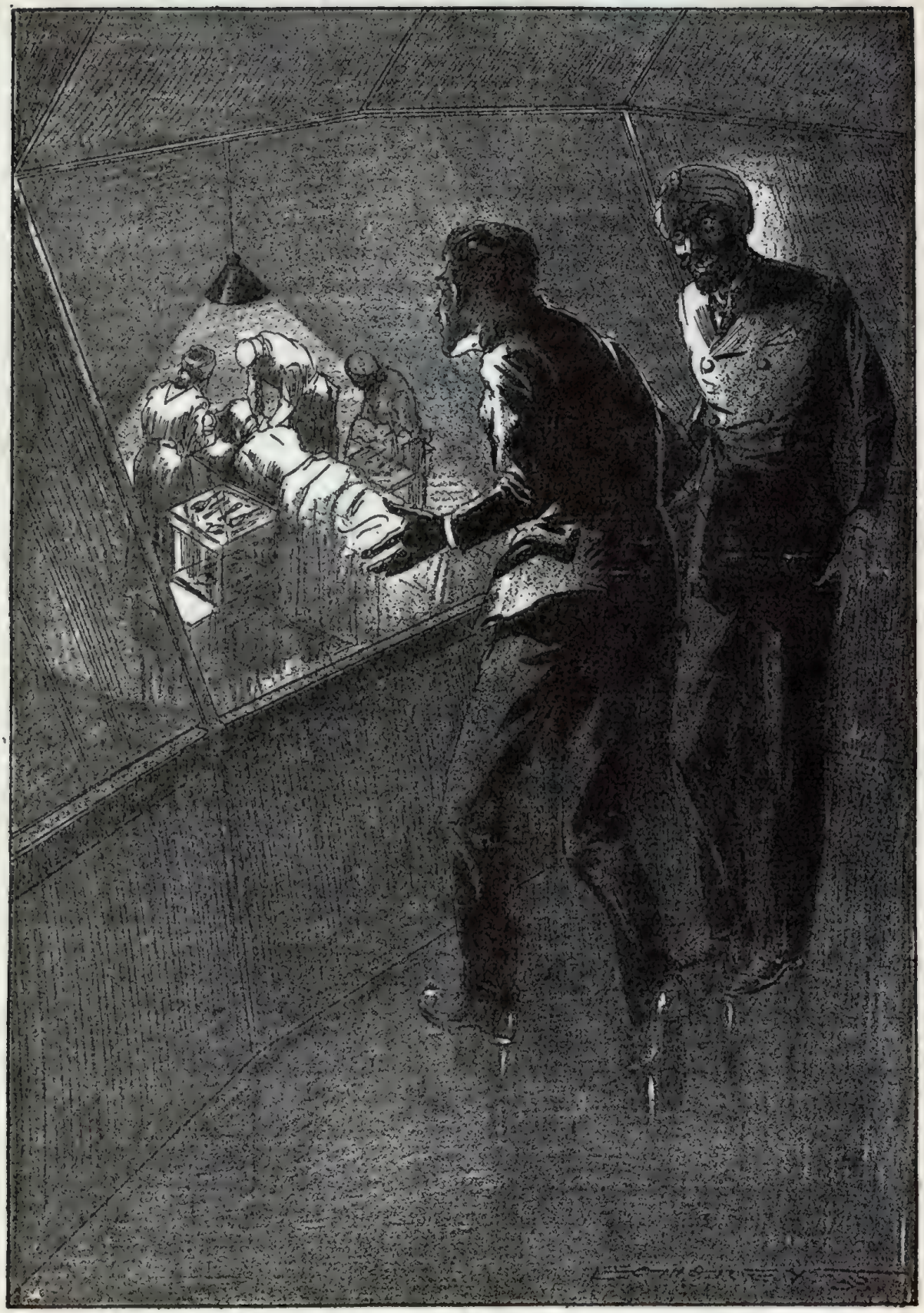
At this hour the dining rooms are generally deserted and only a few convivial souls may be found congregated at the small but well-stocked bar. To-night was no exception save for the party of four at the table in the middle room, just inside the doorway that led to the bar.

In order that the succeeding events may be understood the better, it is necessary that some attention be given to the four men who were here assembled.

There was Percy Clive Graves, one of Britain's noted economists, recently arrived from London for a conference with American bankers, a lean, lantern-jawed individual with waxed mustache and horn-rimmed spectacles having lenses of unusual thickness. Sir Clive was marked by an uncommon deformity, a shortened and oddly limber right arm from which the humerus had been removed on account of an injury or some bone infection that might have been picked up during a sojourn in India.

A dark-skinned foreigner with meticulously barbered Vandyke beard and sword-sharp black eyes was probably the most conspicuous member of the group. He was known to his companions as Abdul Nad and was presumably a Turk, though he spoke English as fluently and precisely as Sir Clive himself.

The other two were Americans. David



Amazed, he found himself looking down through a series of glazed panels into a surgical operating room. On the table, face down, was a man.

Cullen, short and stout and wearing a good-humored grin perpetually, was a young reporter for one of the metropolitan dailies and had come here with the express purpose of waylaying and interviewing Sir Clive. The fourth, Eric Stanley, was a bachelor of independent means who indulged for the greater part of his time in his favorite hobby of scientific research. Stanley was of athletic build, tall, blue-eyed and sandy-haired, and would have been a great favorite with the fairer sex had he not made it a practice to avoid them, even to the point of rudeness.

These four had been strangers to one another only a few hours previously, and the manner of their meeting was one which may only be duplicated in a place like George and Tom's. Cullen, trailing Sir Clive, had managed to insinuate himself into the good graces of the Englishman and take a table with him for dinner. The place had ben crowded at the time and Stanley, arriving late, was assigned to the same table by Henri, the head waiter. Abdul Nad, coming still later, had taken the fourth chair after an apologetic request for permission.

Now, listening to their conversation, an observer would have been sure that the four were the oldest and fastest of friends.

CULLEN was finishing a story which had held his listeners spell-bound, a story of the activities and final dramatic end of one of New York's most powerful racketeers.

"—and, would you believe it?" he wound up. "Guardo made the girl confess the whole thing on the witness stand. He just sat there and glared at her until she repeated every lie he had planted in her mind. If ever there was a frame-up, this was one—"

Sir Clive snorted, albeit good-naturedly. "She was guilty, sir, you may take my word for it. I care not how intelligent a woman she may have been or how talented. In fact, the keener her mind the less subject would she be to influence of the sort at which you hint. I am firmly of the belief that no man or woman of intelligence can be made the tool of another by mere threat or force of will. No mind, no man-made or man-conceived power is sufficiently strong to force you or me or any of us here into an action distasteful to us."

"You think so?" Abdul returned smoothly. It was the first sign of friction; his black eyes were alight with mysterious Oriental passion though his voice was silky and ingratiating. "Not before during this most enjoyable evening have I contradicted or disagreed; now I beg most humbly to differ with you. There *are* forces of which the average man knows nothing at all, forces which may accomplish this very thing of which our young friend tells. I speak with authority, Sir Clive, and I venture to make a wager——"

The Englishman snorted rudely, interrupting him. "You would wager with me?" he scoffed. "Against my own strength of will?"

Stanley drew in his breath sharply, seeing the swift resentment in the Turk's black eyes.

"Precisely," said Abdul stiffly.

"In pounds, dollars, or—piasters?" Sir Clive's words were uttered with sarcastic inflection. Insultingly.

Abdul arose and bowed politely. "I wager not in currency," he retorted, once more in oily tones, "but in lives and human emotions. I leave you now, gentlemen,"—nodding respectfully to the two Americans—"and with you, Sir Clive, I wager a life against a theory. There are many things of which you know naught."

The polished Oriental was gone.

Stanley nudged Cullen under the table as he saw the purple rise in the English-

man's cheeks. "Sit tight," he whispered. "There's a feud here, is my idea. An enmity we did not suspect. Why——"

"The damned upstart!" Sir Clive exploded. "He prates to me of things that are better left unsaid. He drivels of the power of mind over matter and of the implanting of demoniac impulses in normal brains. The man is mad."

Stanley rose from his seat, embarrassed.

"Sit down," begged Cullen in a husky whisper. "I've got to make a story out of this."

The Englishman was calling for the waiter and, seeing the anxiety in the young reporter's eyes, Stanley subsided. But there was that in this situation which no longer appealed to the scientist's sense of humor or fitness of things. He was strangely disturbed.

"I say, waiter," Sir Clive demanded loudly. "Whiskey and soda for three, you hear?"

Cullen kicked his fellow-American stealthily, effectually closing off his intended objection.

CONSIDERABLE time passed and then, after a tirade that was quite incomprehensible to his companions, Sir Clive fell oddly silent. He sat rigid and stared with eyes that seemed not to see his surroundings.

"He's stiff," grinned Cullen.

"No-o." Stanley hesitated, peering long at the frozen mask of the Englishman's face. "A couple of whiskey and sodas never did that to a man of his upbringing. It's something else, something queer."

Cullen chuckled, then became solemn as he looked more closely at Sir Clive. "You're right," he conceded. "He's just plain fallen asleep—with his eyes open. You don't suppose Abdul——"

"Impossible." Stanley said it uncertainly. He was amazed to find his own nerves tingling and a sense of drowsiness coming to steal away his alertness.

Sir Clive transferred his gaze from the tablecloth to the doorway through which sounds of merriment issued from the bar.

"He's seeing things, sure enough," whispered the reporter.

Stanley moved uncomfortably in his seat. It was contrary to all of his conceptions of science and of life, this thing that was happening to him and apparently to the others—contrary to any of the accepted laws of nature with which he was accustomed to deal. He knew suddenly that he was asleep. Sir Clive was asleep, and Cullen. All of them breathed with the depth and regularity of slumbering children. Yet, everything was clear enough in Stanley's sight and mind. He saw that Sir Clive's muscles had relaxed now, all excepting those of his narrow face. Through the thick lenses, his gaze was that of a somnambulist.

Cullen was shaking the man. Weakly, half-heartedly. There was no reaction, no sign of understanding in Sir Clive's glassy stare, no recognition of his companions.

A man walked in from the next room.

Stanley gasped involuntarily, for this man bore a marked likeness to Abdul Nad, who had left them. His features were quite similar to the other's; the swarthiness of skin and the flashing black eyes of him were those of a younger and less sophisticated Abdul. He sat down at the table without a word or gesture of apology, his gaze riveted to that of Sir Clive with fierce intensity.

But his voice was gentle when he spoke. "You sent for me, effendi?" he asked.

"I? Yes, Mustapha, I sent for you." The Englishman's words echoed hollowly in an unnatural silence; his stare went through and beyond the man he was addressing.

Stanley, knowing in his scientific mind

that these things were unreal, fought to regain his normal senses. But the visions persisted.

And then, without warning, that crippled arm of Sir Clive's swung out with a flipping, stretching motion like that of a rubber hose. An arm with no bone in the upper portion, it whipped snakily and extended to six inches beyond its normal length. A powerful right hand was at its extremity, gripping the stranger's throat. Fingers of steel tore into the bronzed flesh. Black eyes popped from their sockets.

Stanley was dimly conscious of a lack of volition in his own movements, yet he lunged across the table, clutching at that flabby arm in desperate but futile effort to keep the man from murder. Cullen, he knew was there—he saw him dimly through a haze, pawing at the grimly silent Britisher and shouting incoherently.

But it was all like a dream, having the eery leisureliness of a slow motion picture. Bedlam reigned in the place. A corpse was on the floor, a swarthy crumpled figure with torn jugular and twisted smile. A madman—Sir Clive—gloated over the still form.

Breathing deeply and with measured rhythm, Stanley slumped into a chair. His head fell to his shoulder.

CULLEN shook him into partial wakefulness and he saw they were alone in George and Tom's middle dining room. The murdered man's body had been removed. His murderer was gone. No sounds came from the front rooms.

"Snap out of it, old man," the reporter was pleading. "They're closing up the place. We'll have to beat it."

"But—" Stanley was not yet fully aroused.

"No buts. I know what's got you—the murder we thought we saw. Well, listen to me: there wasn't any killing at all. We dreamed it."

"No killing? Then—what——"

"You're asking me!" Cullen was raising his new-found friend to feet that were unruly. "All I know is that Sir Clive went out of here stiff-legged and they thought I was crazy when I tore after him. Tom stopped me and let the Englishman get away. Then, when we came back here, there was nothing to be seen excepting you sleeping like a dead man. No blood, no corpse—nothing."

Abruptly, Stanley was wide awake. He had been certain before that the entire scene was a delusion, certain though somehow doubtful. Now he was convinced of the unreality of the thing. "It was Abdul," he asserted. "His wager with Sir Clive. He must have drugged our coffee before he left."

As soon as he had spoken the words he did not believe them. No after-taste of a drug was in his mouth, no after-effect remained to becloud his brain. He was as wide awake and as fresh now as he had been upon arising that morning.

Cullen looked at him oddly. "I think you're right about Abdul," he agreed. "But he didn't use any dope on us. My slant is that it was some weird mental force like those we talked about."

"From a distance? An hour after he left us?" Stanley could not bring himself to believe such a thing possible.

"Well, however, he did it, I think he means no good to Sir Clive. And I'm going to look up the Englishman at his hotel right now and warn him." The reporter moved toward the door.

A glint of light on the table attracted Stanley's attention and he reached over to pick up a tiny object that gleamed amidst the confusion of tableware and soiled linen. It was a small sphere of iridescent material, no larger than a pea, but there was a strangeness about its color and sheen . . . the scientist dropped it in his pocket.

"Wait, Cullen," he said. "I'd like to go along with you."

CHAPTER II

Nightmare House

THE desk clerk in Sir Clive's hotel was quick enough to reply to Cullen's query but there was that in his manner, which left no doubt as to his suspicion and disapproval of nocturnal adventurers.

"The titled gentleman is not in," he said stiffly. "But he did leave a message for two friends he expected would call. Are you by any chance these friends?"

Stanley looked at the reporter in amazement. Surely Sir Clive had not expected them. Cullen stammered a bit, struck with the same doubt. "We *are* two friends," he said uncertainly. "But we hadn't looked for word from Sir Clive. Is it long since he left it?"

"Within the half hour," growled the desk man, turning to shuffle a number of envelopes between his fingers. "May I ask the names of the callers—just in case—?"

"In case what?" The reporter was losing his temper. "I am Dave Cullen, of the *Blade*—if that makes any difference. And the man with me is Eric Stanley."

"Oh, I beg your pardon." The clerk became obsequious, then dropped his voice to a confidential whisper. "The message is for you gentlemen. And it is a strange thing, I am inclined to think. Sir Clive came in a short while back and was much disturbed. He penciled this note and left immediately."

Cullen had opened the envelope and extracted a slip of paper with a few straggling marks across its whiteness.

"Only an address," he grunted. "And in one of the most deserted sections of the burg. Eleventh Avenue, below Thirtieth."

Stanley, thinking of the scene in George and Tom's, was more than curious. He felt the hard lump in his pocket that was the mysterious globule he had picked up from the table. He was still oppressed with a sense of unreality in connection with the things which had happened after that informal dinner. Cullen was looking at him once more with his odd questioning stare.

"Shall we go?" asked the reporter.

"Only thing to do, is my idea." Stanley had had no thought of doing otherwise. There was a mystery to be solved here, and he was not one to miss the chance of being in on it.

NOT many words passed between them during the taxicab ride down the dark avenue and over the rails of the freight terminal. Stanley was endeavoring to reconcile his own theories and experiences with the unusual occurrences of the night. But he was completely at sea.

He knew nothing at all about these men with whom he had dined. Cullen he took at his face value, for the enthusiastic young reporter was a type he well knew to be incapable of anything but the strictest honesty. That there was a hidden something between Sir Clive and Abdul, he had not the slightest doubt, though he felt certain that the two so widely different men had not met before this night. Unless it might have been in the distant past or in some other incarnation. At the last involuntary thought, Stanley chuckled. He did not hold with theories of the sort that would permit of such a belief. But it was sure that Sir Clive had not recognized the Turk, though it may have been that Abdul recognized the Englishman as an enemy out of some dark chapter in the lives of both. At any rate, there was a strange and threatening something. . . .

This business of the dreams was still another matter. Of course there had been

Sir Clive's insulting remark and the foolish talk of a wager. Lives against a theory. And the succeeding events were of such nature as to seem incredible now. Certainly there had been no murder, nor had the man Sir Clive addressed as Mustapha actually come into George and Tom's dining room. All these things were undoubtedly hallucinations of some unfamiliar and unexplainable sort.

As a matter of fact, that a man with Sir Clive's deformity could strangle another as he had seemed to do, was an impossibility. With the humerus removed from a human arm, the fingers do not retain sufficient strength to accomplish such a feat. The arm is a flabby, nearly useless member. The grip of the hand is like that of a child.

As to the visions, or hallucinations, or whatever they might be, here was the greatest stumbling block. It could not be hypnotism of the sort used by Indian fakirs in their rope and sword tricks. Nor could it be that some weird oriental drug had been used. No, this was a thing new and strange to Stanley's experience—a thing to be looked into and written up for the technical journal to which he was a contributor. Or to be kept secret along with certain of his own findings which he had considered as too bizarre for publication.

And, besides, there was that small iridescent sphere. . . .

Stanley roused with a start as the taxi came to a stop before a dark and gloomy warehouse.

Cullen paid off the cab driver, who leered at them suspiciously and then had yanked his battered vehicle off into the darkness. The broad emptiness of Eleventh Avenue was somehow a menacing thing, at this hour deserted, yet seeming to be alive with lurking ghost-shapes that peopled the shadows. "Death Avenue," someone has named this thoroughfare of the railroad tracks.

Stanley squinted up at the forbidding pile of masonry before which they stood. "Sure it's the right place?" he asked doubtfully.

"Number's same as on the note," mumbled Cullen. "Maybe we're a pair of fools for coming down here. Then again, maybe not."

"There isn't a light in the place." Stanley was beginning to believe they had come on a wild goose chase.

"You're right, there isn't. But I smell a story—nose for news, you know. And I'm for scouting around here a little."

"Shouldn't we have notified the police?"

"Police!" snorted Cullen. "And have them spoil my——"

A deep bell-like note interrupted him, a vibrant clang that reverberated through the vastness of the building before them. There followed a rumbling that seemed to emanate from the front wall as if the entire face of the structure had been set in motion by some huge vibrating machine within.

Abruptly where there had been barred double doors and blank walls was a broad lighted passage. A man stood just inside the entrance, beckoning to them. It was Sir Clive.

CULLEN rushed in. Stanley, not so impetuous of nature, followed more slowly. No sooner had he come within the entrance than the feeling of unreality in his surroundings reasserted itself—the same feeling he had experienced in George and Tom's. Unconsciously his hand closed over the pellet he had picked up from the table.

Sir Clive, he saw, was smiling. But it was an unnatural, fixed smile that raised the points of his waxed mustache. Behind the thick lenses of his spectacles his eyes were abnormally wide and bright. Staring. Sir Clive was asleep on his feet.

"Ah, my friends," he greeted them.

"It is good to see you here. Will you join me in my apartment?"

Cullen's enthusiasm seemed suddenly to wane. He stood as if uncertain whether to advance or retreat.

Stanley was conscious of his own voice saying: "Apartments here?" But the question had come unbidden to his lips.

"Indeed yes. Otherwise I should not have asked you to come here. My rooms are on the ninth floor; you may take my word for it they are very comfortable."

Cullen found his voice. "How did you know we'd follow you to your hotel?"

If such a thing were possible, Sir Clive's stare was blanker than it had been. His set smile had not changed. "Hotel? This is my hotel, gentlemen."

Somehow they were in the car of an elevator after that, rising swiftly. Stanley fought the drowsiness that was overpowering him. He swayed a bit where he stood; noted hazily that the operator of the car was a squat and ugly negro. Then they were out in a corridor of soft lights and thick carpets.

Cullen droned: "Asleep, sure enough. We're sleeping again."

A wave of anger surged up in Stanley, angry with himself for being thus duped. With a mighty effort of will he conquered his drowsiness. The tiny pellet in his pocket . . . between his fingers now . . . that was the cause of it all. He hurled it the length of the corridor. Instantly he was sorry for the act. He had meant to examine that globule, to subject it to certain tests. . . .

"It will avail you nothing to dispose of the spheroid, my friend." Sir Clive's thin lips moved under the waxed mustache with the words, but it was not his voice that issued from them.

It was the voice of Abdul Nad.

STANLEY'S anger congealed into a determination to see this thing through to the end, to outwit Abdul and to discover his secret. The overpowering effect of the drowsiness had lessened somewhat with his casting away of the spheroid. He felt that his senses were nearly normal once more. But they were not. It was as if something in his mind clicked off suddenly, then on again like the opening and closing of an electric switch.

He had not remembered entering this room, yet he found himself seated in a large and luxuriously furnished apartment. Cullen was there, and Sir Clive. They sat before a broad fireplace, staring at a dark-skinned man with a Van Dyke beard. Abdul Nad.

The Englishman had only played at being their host, played the part whether he would or no. Actually Abdul was the host of all three. His black eyes were alight with the friendly gleam they had held when he joined them earlier in the evening.

"And now that you are fully awakened, gentlemen," he was saying, "I beg most humbly that you remain with me as my guests to-night. I assure you that you will be quite safe in this my cosy, if somewhat unusual, abode."

Sir Clive sputtered: "But—but, I say, my good sir. You have transgressed all the rules of decency, of hospitality. It is an outrage, this thing you have done. I'll not remain."

"Now, now," soothed Abdul. "You forget our wager."

Stanley saw Cullen looking covertly at him, thought he detected a solemnly dropped eyelid. The Englishman was unmollified.

"Wager, wager," he fumed. "Tommyrot! A life against a theory, you offered, and you tricked me——"

Abdul laughed good-humoredly. Sir Clive had risen from his chair in anger but subsided at this evidence of resumed friendliness.

Said Abdul: "Come now, you must ad-

mit that you have lost the wager in the matter of force of will. As to the terms, please forget them. Rest assured I shall not attempt to collect. Not to-night, at least. Meanwhile, I crave company in this lonely—ah—domicile of mine. I beg of you to remain here, you and your friends. The hour is late and the streets hereabouts are deserted of honest people. Dangerous. What do you say, Sir Clive—and you, gentlemen?"

His glance included them all. Outwardly the man personified geniality. He was suave, apologetic. But there was a sinister meaning to be read into his words. An understanding look passed between Cullen and Stanley. Both men nodded solemn agreement.

The Englishman was not easily pacified, but a decanter of Scotch and a syphon of soda had their effect. Soon he was discussing the matter freely and without rancour with their host.

Strangely, not one of them asked for an explanation of what had occurred. Nor was one vouchsafed by Abdul. It was a most unusual gathering in an unusual place.

LATER, Stanley and Cullen were shown to a large double room by Abdul's man-servant, a slant-eyed Oriental of uncertain lineage. The chamber was such as might be found in a first class hotel, with twin beds, bath, and all conceivable conveniences.

"Are we still dreaming?" Cullen asked when the door was closed behind them.

"Not now, I think." Stanley dropped his voice. "Seriously, I don't like this much. Abdul says he is putting Sir Clive in the room adjoining ours, that there is a communicating door. I wonder."

Cullen's round face did not lose its customary cheerfulness. He drew back his coat, displaying a business-like pistol in a shoulder holster. "Well, my slant is about the same as yours. But I have an idea we can take care of ourselves and the Britisher, too. We——"

A blood-curdling scream rang out from beyond the partition. It is a horrible sound when a man cries out in fear.

The color drained from Cullen's round cheeks. Stanley rushed to the communicating door; it yielded to his frantic turning of the knob.

Abdul had not deceived them about the adjoining room. This was Sir Clive who stood before them when they entered, but a transformed and terror-stricken Sir Clive. An ordinarily upstanding, though lanky, man who seemed suddenly shrunken to half his normal stature. A man with bulging eyes and palsied hands whose right arm was raised with a skinny forefinger pointing to the single bed the room contained.

On the bed was a ghastly object, a corpse. It was the man Sir Clive had called Mustapha and he was lying in a welter of blood that darkened the white counterpane. Face up he lay, and the torn throat was exposed to their view as they had seen it in George and Tom's.

Stanley's eyes turned from the gruesome sight to rest once more on the shivering, tottering figure of the Englishman. Fascinated, he saw new transformations come over the man, saw him straighten to military erectness, saw the years fall away from him and his lean body fill out to youthful proportions.

The arm that was outstretched—his right arm—was tense and strong. No arm from which the humerus had been removed could be extended in this manner. . . .

CHAPTER III

Cullen Rebels

STANLEY knew now that he had erred in assuming himself free from that inexplicable influence which had controlled them all. He strove with all his might to bring his thoughts

clearly to bear upon this new situation which confronted him, a situation that was unreal as surely as had been the others. Through the befogging veil his mind reached out for truth and for remembrance. There was something he had started out to accomplish. . . .

A curious babbling of voices brought him to some semblance of normality. One voice was Sir Clive's, the other Cullen's. Cullen was there in his distorted vision, walking stiff-jointedly toward the bed on which that ghastly dream-thing lay. Or was this corpse a reality now? Stanley was not sure. Perspiration stood out on the reporter's forehead in great beads. He was bending every effort of his will to some task he had set for himself, a task that was not at the moment apparent.

Sir Clive sank to the floor with a moan. His babblings ceased.

Cullen, struggling against his own reluctance or against the alien force which had gripped him, managed to reach the bed. With an effort he stretched forth his hand to touch the corpse. His fingers reached a point a few inches above the rigid torso, hovered there uncertainly for a moment and then drove down, clutching determinedly.

The corpse vanished utterly at the contact. On the counterpane, which now was unwrinkled and unstained, reposed one of the glimmering spheroids.

Stanley knew instantly that they were released—awake. He dived for the metallic pellet and pocketed it.

"What's that?" Cullen demanded.

"I don't know, but there was one on the table at the restaurant. They have something to do with this business, is my idea, and I intend to examine this one later. Meanwhile, we ought to look after Sir Clive."

The Englishman appeared only to have fainted. He seemed to be normal, flabby right arm and all. Not metamorphosed as Stanley had seen him when under the influence that brought hallucinations. He was unconscious, but his pulse and respiration indicated that he would soon recover. They disposed him comfortably on the bed.

Cullen spoke angrily: "This thing is getting my goat. And, right now, I'm going to go and get Abdul and have it out with him. What does he think we are? What right has he to torture a big shot like Sir Clive with these demonstrations of hocus-pocus?"

"I'd take it a little easy," advised Stanley. "There is a real reason for all this, I think. Abdul is up to something bigger than we imagine, and this is only the beginning."

"Well, I mean to get to the bottom of it—now."

"You'll never do it by threatening Abdul. We've walked into his trap here and are caught. So far, at least."

"You're right, at that. But what's your slant on it? We can't just sit by and let it go as it is."

Stanley had taken the spheroid from his pocket and was turning it over in his fingers. "This," he said, "undoubtedly has something to do with the sleep and the—dreams. Just how, I am not prepared to say. If only I were able to take this to my laboratory I might learn something. But that will have to wait."

"Dreams." Cullen's frown had changed from one of anger to one of perplexity. "You really believe these have been dreams?"

"Illusions, if you will. Dreams are generally thought of as such; hallucinations peculiarly associated with the condition of sleep. It is certain that we were not in our normal condition of wakefulness when they came to us. We were—have been—asleep. Not normally, you understand, but nevertheless asleep. Somnambulists. In that state we were yet conscious . . . oh, confound it, Cullen, I'll

have to do more thinking about this. I——"

From the doorway was heard an amused chuckle. Both men whirled to face Abdul.

"AH—gentlemen," he said smoothly. "I trust I do not intrude. It surprises me that you have not retired."

Cullen flared up. "Intrude! Retired! Look at Sir Clive and ask us why we haven't retired. You—"

Abdul's eyebrows raised and he smiled sardonically. The black eyes were widened, glittering—the eyes of a fanatic. "It is of no avail that you concern yourself with the dog of an Englishman. He has but begun to taste of the medicine of Doctor Nad."

"*Doctor* Nad." Something stirred in Stanley's memory but he was unable to place accurately the faint remembrance connected with the title Abdul had given himself. He said softly: "It is bitter medicine you have administered, Doctor. Sir Clive needs rest and attention."

The Oriental laughed shortly. "He will do nicely as he is. He is a guest, and guests of the Master of Dreams are ever cared for properly. We will leave him and return to my drawing room."

Cullen opened his mouth to protest but was silenced by a vigorous shake of Stanley's head.

"We will return to my drawing room," Abdul repeated. And the gaze he bestowed on the reporter was one of sinister warning.

Stanley was cudgeling his brain as they went out into the corridor. There had been an unsavory story of some sort connected with a Doctor Nad several years before, but he was unable to recall the details. If Abdul was the same man, as undoubtedly he was, it was evident that he was in a fair way now to make another stench in the tabloids. And Cullen's sheet might be first to headline it.

"Sir Clive will slip into a natural sleep when he comes out of his present state," their host was telling them when they reached the large room with the fireplace. "And now, if you will be seated, gentlemen, I shall be pleased to tell you something of my present activities."

Cullen refused to take a chair, standing stiffly aloof. Seeing this, Abdul indulged in a wintry smile that was not lost upon Stanley. Somehow it sent a shiver down the scientist's spine, though he could not have accounted for his feeling of apprehension had he tried.

The Oriental said musingly: "Dreams. How mysterious they are to most students. How useful to me. I call myself the Master of Dreams because I have solved the mystery of these illusions and have learned how to control them. You may wonder, gentlemen, why I introduced myself to your table last evening, why I demonstrated as I did in the matter of my wager with Sir Clive, why I caused you to be sent here."

"*May* wonder," snorted Cullen. "Why shouldn't we?"

Abdul ignored the reporter, addressing himself to Stanley: "As a scientist I am sure you will be interested in what I am doing. That is why I brought you to me. But I warn you not to be too inquisitive, not to attempt prying too deeply into my secrets. It would not be to your—ah—best advantage. For I, Abdul Nad, am a master of human destinies by virtue of this mastery of dreams which you have seen. I shall demonstrate this to you presently."

Cullen grunted and was again cooly ignored.

Stanley noted that the glitter of their host's eyes was almost maniacal. "Cullen and I are to be the subjects of this demonstration?" he ventured.

"No indeed, only witnesses. And, this time, I shall permit you to retain your senses fully in order that you will miss

nothing. My mission in this country is to avenge certain old wrongs suffered by me and my people. I have started with Sir Clive—only started—and my next subject is to be a New Yorker of great wealth and influence. I was fortunate indeed that the Englishman arrived here during my stay, as this will save me a trip to London."

"You have known Sir Clive in the past?" Stanley asked him.

"To my great sorrow." The spasm that contorted Abdul's features might have been hatred of the man or exultation in his discomfiture.

Cullen demanded: "Who is this Mustapha?"

The sword-sharp gaze of Dr. Nad turned upon him, but the reporter met it unafraid. Stanley drew in his breath sharply.

"That, my impetuous young man," said Abdul coldly, "is none of your affair."

"This mastery of dreams," Stanley put in, to relieve the tension. "Do you acquire it by physical means? By that I mean, is it a mental force or a mechanical one?"

The building resounded to the deep-throated clanging of a bell. Abdul sprang to his feet. With his face lighted by an almost ghoulish expectancy he said:

"I recommend that you judge of that for yourself. My late guest is arriving."

A MASSIVE refectory table occupied the center of this room. Dr. Nad moved swiftly there and arranged two chairs so that they were turned partly toward the fireplace. Then he backed against a carved walnut cabinet that stood by the wall. Cullen, still on his feet, regarded him with eyes narrowed to slits. Stanley, keeping to his chair, knew not what to expect.

"Dreams," said Dr. Nad from the shadows, "are of many kinds and are not necessarily associated with the condition of sleep. There are the dreams of natural sleep and the self-excited hallucinations of normal wakefulness, the visions of the neuropathic and insane who often can not distinguish dream from delusion. Then there is the externally excited dream of which I am master. And that is quite another matter. You will observe, gentlemen, that I permit you to remain awake this time but still allow you to see and hear that which is about to come to pass in connection with my new subject. Part of that which you are to witness is reality, the rest hallucination. In your waking condition you will be able to distinguish the one from the other. . . ."

A man walked in from the corridor, stiff-legged, staring. Stanley caught his breath when he saw who it was. Peter J. Carton, wealthiest man in America, director of a hundred banks and corporations, the power behind New York State politics and considered by many as virtual dictator of most national policies. Peter Carton—here! A corpulent, florid-faced individual at whose frown legislators and bank presidents trembled. Helpless in the hands of Abdul Nad.

Cullen made a gurgling sound in his throat but remained where he was and said nothing.

Dr. Nad, Stanley observed, had melted into the shadows before his cabinet. His hands were behind him and his dark clothing was indistinguishable. Only his face seemed to be there . . . and the gleaming black eyes, like those of a serpent . . .

Peter Carton sank into one of the chairs by the table and sat half facing them. It was obvious that he was in the same condition of conscious non-volition that had characterized Abdul's first demonstrations. He was asleep, but not naturally so.

STANLEY realized that his own senses were entirely normal as Dr. Nad had promised they would be. And now he was conscious of a thing he had not pre-

viously observed in connection with the phenomena. A gentle throbbing was in his ears, a barely discernable sound as of the purring of delicately balanced rotating machinery not far from where he sat. He did not believe it to be his imagination.

In the chair beside Peter Carton a vision was materializing. At first only the outlines were visible, then with utmost clarity the form of a woman was there. A most beautiful woman of the Orient. The deception was so vivid that the heavy scent of an exotic perfume was wafted to Stanley's nostrils. He cast a sidelong glance at Cullen and saw that he was tense in every muscle. Waiting.

Carton rose jerkily to his feet crying in amazement: "Stefanie!"

"Yes it is I, Peter. Aren't you glad to see me?" The girl's voice was rich and mellow, her dark eyes raised beseechingly.

Carton seemed about to succumb to apoplexy. "But—but," he stammered, "I paid your father—"

"Father, yes. You paid him. For me you had only promises and you promised me by the sacredness of our love that you would return for me one day. You came not, so Stefanie has come to you."

"Is this blackmail?" bellowed Carton. "If it is I swear I'll jail every rascal mixed up with it. Answer me."

He gripped the girl's white shoulders and shook her violently.

Cullen's growled protest was distinctly audible.

And then a voice came out of the shadows. It came from where the dim form of Dr. Nad had been but a moment before. But it was not the voice of Abdul, and Stanley noted with a start that only a pair of jet and basilisk-like eyes was to be seen in the shadows before the carved cabinet.

The voice spoke compellingly: "Peter Carton, you will remove your vile hands from the girl you betrayed. And you will proceed to the sole act of atonement that is acceptable to my people."

"No, Peter, no," the girl begged. "I want you, Peter, I—"

Carton's hands dropped from her shoulders and great welts showed where they had been. He seemed not to see her now, but only a terrifying something back there in the shadow of the cabinet. Slowly he reached into the pocket of his coat and as slowly drew forth a wicked little automatic.

Then he moved with inconceivable speed. The pistol was at his own temple. Paralyzed by the suddenness of it, Stanley could only shout an unintelligible warning.

The room echoed to what seemed a thunderous report and Carton fell forward over the table. The girl Stefanie had vanished.

Cullen yelled: "God—this is murder," and flung himself into the shadow of the cabinet.

Stanley, reaching the table in a single bound, turned Carton face up. At least *this* was no illusion. The financier's aim had been true. He was quite dead.

There should have been sounds of a scuffle over by the cabinet, but the room was still. Suddenly panicky, Stanley lunged into the gloom and groped for the two men who should be struggling there. But his hands encountered nothing excepting the carved face of the cabinet. Cullen was not there, nor was Dr. Nad.

They had vanished like dream creatures of the Master.

CHAPTER IV

Abdul Shows His Hand

STANLEY knew there was nothing illusory in this vanishing act. The cabinet was undoubtedly responsible. It was a massive affair, set against

the wall and was of sufficient size to provide a doorway to an adjoining room. With reference to the main illumination and a screen that was between it and the fireplace, it was so located as to be in deep shadow. Obviously it was a part of Abdul's stock in trade.

But try as he might Stanley could locate no panel or door in its face or sides. His exploring fingers disclosed no hidden spring or mechanism that would operate such a barrier, but his reason told him it must be there. Flesh-and-blood men did not vanish into nothingness as Abdul's dream creatures might.

Perhaps there was another entrance to the chambers where Cullen had so rashly followed the Master of Dreams. Stanley went out into the corridor to investigate. There were only three doors beside the entrance to the room he had left. One was that of the elevator shaft, the other two of the bed chambers he had already visited. He went into the room where Sir Clive lay and found him in deep natural sleep.

This place of Dr. Nad's was about as safely hidden from prying eyes and intruders as could be imagined. And as difficult to leave. Stanley walked back to the drawing room.

He found Abdul standing before the fireplace. The body of Peter Carton was gone. Nor was the reporter to be seen.

"Where is Cullen?" he asked the Oriental.

Abdul shrugged expressive shoulders. "Of him we will not speak. He is too—ah—shall I say given to ill-considered violent acts."

"You have not—" Stanley advanced warily.

"No, you may rest at ease, my friend. The too hasty youngster is in no danger of his life. It is only those with whom I have a score to settle who are thus endangered. I have merely placed this Cullen where he can not interfere with the work that is to be done. In fact I venture to say he may even be of some help to me."

"Look here, Doctor." Stanley kept his temper in check with an effort. "This is a rather high-handed procedure of yours, such is my idea. I'll admit you are not the actual murderer of Peter Carton but you were responsible for his death and would have a hard time proving your innocence in court. Then there is the matter of Sir Clive and the holding here of Cullen and myself. We are virtual prisoners. It might well be considered a kidnaping by the authorities."

"Sit down, please." Abdul's tones were silky, almost wheedling, but there was a threat in his eyes that was not to be ignored.

Stanley dropped into the chair he had previously occupied. He was convinced that nothing was to be gained by crossing the man now.

"I fear not your authorities, nor your laws, nor any power on earth," the Oriental boasted. "I am a law unto myself. Master of Dreams am I and through their power Master of Men and their destinies. You sir, as a scientist, will appreciate this when you are more fully cognizant of the power which is mine."

Convinced now that the man was mad, Stanley did not know how to reply. Abdul had seated himself before him and now lighted a cigar and relaxed in his chair. He went on:

"You are saying to yourself, no doubt, that this is hypnotism. By the lexicographer's definition of the word that is correct; it is an artificially produced somnambulistic state in which the mind of a man becomes passive, responding readily to suggestion or direction. But it is something more than mere hypnotism, this dream mastery of mine, for sleep, as you have seen, is not necessary to the production of hallucinations. The waking sleep, as I have termed it, is required only when

I desire to obtain complete control of the actions of my—ah—patients. And, something more, I am able to render a patient permanently subject to my will, permanently the creature of such dreams as I please to bring to his consciousness. Does that mean anything to you?"

"Why yes. It would mean, if what you say is true, that a power is in your hands which might be used to great good or which might work great mischief. But your object in all this—outside of the motive of vengeance which I have seen at work—is something I do not see."

Stanley was playing for time. He decided it was best to humor his host until such time as an opportunity of escape might be presented. If he could get to Cullen, and get Sir Clive out of this. . . .

"You shall see, I promise it." Abdul rose and moved toward the cabinet. "Follow me, my friend."

THE carved front of the cabinet swung inward at a whispered order of Abdul's. A few syllables in a guttural tongue were all that it required. Electrically controlled and voice-operated, was this device.

Stanley followed through into a passage that sloped downward into a room where the illumination seemed to come from the floor. Amazed, he found himself looking down through a series of glazed panels into a surgical operating room.

On the table, face down, was a man. Over him bent a surgeon, his gloved hands working rapidly, his masked face close to his work. At his side were nurses; all the equipment of a modern hospital operating room was at his disposal. Stanley saw that a small incision had been made at the base of the patient's skull.

"Good Lord!" he exclaimed. "This establishment of yours is a place of surprises, Doctor. What sort of an operation is this, and who is the patient?"

"Surprises? I agree. The operation is the one that makes a man permanently subject to the Master of Dreams wherever he might be. Quite without physical danger, I assure you. The patient is Cullen."

"Cullen!" Stanley jerked himself erect and looked into the muzzle of an automatic which might have been the one that had fallen from the dead fingers of Peter Carton.

"Restrain yourself, my friend," smiled Abdul mirthlessly. The black eyes above the pistol were unsmiling. "There is yet much for you to see."

Stanley subsided. The situation seemed hopeless but he would not admit it to himself. If there was a way out he would find it—later.

The mad Turk indicated another passage. "You go that way," he commanded. "I follow."

There was no alternative. Stanley walked into the passage with Abdul at his heels. This one led downward at an angle even steeper than the first. And it opened into a large room where a strange sight met his eyes.

The floor, walls and ceiling were bare. Around the four sides of the room were lined a great number of steamer chairs and most of these had an occupant. Some were men, some women, and all reclined as if asleep. But Stanley saw, with a start of horror, that not one eye in the assemblage was closed. These victims were in the waking sleep.

Abdul chuckled. "I venture to say this surprises you, my friend," he said. "You see before you the kindly souls who have elected to call me Master from this time forth. "Here,"—he indicated a police officer in uniform—"is one of the minions of your so-called law. Here a well-known actress." The Oriental, chortling now, walked along the line. "Here you see Manny Krauss, the noted criminal. Next

to him is Dan Cleary, political leader. Judge Mannheim, Fred Benson of the Labor Trades Council, Doctor Cowan of Park Medical Center, Beryl Crowe of the stage and screen, Heinrich the real estate man, Ethelynne Baird, lady of the evening—oh, my friend, many are here. Many of greater note than these; I can not spare the time to enumerate them. What do you think of my collection?"

"I—I hesitate to pass judgment until you've told me the reason for all this." Stanley was feeling his way cautiously.

"Precisely—you hesitate. It is no small wonder to me. Come now, you independent scientist, to my drawing room and we will discuss it in greater detail."

Stanley was glad to leave the room; its very air was redolent of tragedy. Once more in the room above, he sank into his chair with a sigh of exhaustion. The night, he knew, had nearly passed.

"You are tired, my friend," said Abdul. "A Scotch and soda?"

"No-o. Thanks." This incredible dream-control was bad enough; Stanley was taking no chances of being drugged.

SUDDENLY he placed his host. "You are Doctor Nad of the Bombay vivisection incident?" he blurted out. And was sorry he had spoken.

Abdul's eyes were black mirrors, flecked with red, but he smiled. "The same. Disowned by the Medical Societies of the world and by the Engineering Societies as well. I have a bone to pick with my fellow men, as you must realize."

More than ever, Stanley was convinced that the man was unbalanced mentally. He chose his next words carefully: "I do not recall the details, Doctor, and am not attempting to. The association of names was all that was in my mind. I am puzzled, however, as to your reason for letting me in on your secret in this manner."

"My secret? You know nothing of it as yet." Abdul regarded him speculatively. There was no hint of antagonism now in his gaze, or of the disordered mind Stanley had suspected. "You are an intelligent American, a scientist, a man after my own heart. I have heard of you, friend Stanley, and am of the opinion we could work together to great mutual advantage. Are you willing to go along with me?"

Stanley had not forgotten the pistol which Abdul had pocketed so soon after threatening him with it. "I must know more regarding your scheme," he said guardedly.

"This is my scheme," said the Turk, in apparent sincerity. "I have been wronged by society and government; they have discarded me as you and I would discard a worn-out automobile. But I am far from worn out. Society is rotten; government is worse, as you must admit. I propose to take from them what they have taken from me. I propose, not only to avenge my grievances against individuals, but those against our organized society and government. I propose to appropriate the wealth of society and the power of government. Your country is most fertile as a field and that is why I have set up my headquarters here in your greatest city.

"For my lieutenants I have chosen people from every walk of life. A few of them you saw in the collection below. There are men and women of every vocation, every class. Each one of them stands out in his or her particular field of endeavor; each will be a leader. And each is subservient to the mastery of dreams which I exercise. Through these and others whom I shall appropriate to my uses, I shall obtain control of society and of government in this country. That once done, the rest of the world will be easy, for do not the United States lead the world in all things?

"A fantastic scheme you will say. Certainly—but workable as I have proved.

My lieutenants will do, must do, my bidding. In the legislatures, the banking houses, the industries, they will work to my interests. To *our* interests if you will come in with me."

Stanley asked: "What am I supposed to do?" He was dazed by this revelation of Abdul's inner thoughts, confused regarding his motive in thus revealing them to him. But he had not forgotten Cullen or Sir Clive.

"YOU are thinking of these two with whom I met you," said Abdul, as if reading his mind. "They are nothing to you, not even friends. Before last evening you had not met them; they were strangers, as was I, when I came to your table. You are a scientist with vision. So am I. Together we can work wonders. As things now stand, I am alone; only I possess the secret which shall make over the world in accordance with my wishes and theories. All these others are automatons and are incapable of thinking for themselves. I need a partner, a man of science who can understand. A man who will share in the glory that is to accrue to the Master of Dreams."

"Again I ask you: what am I supposed to do?"

"Only throw in your fortunes with mine. Only relieve me of the necessity of remaining forever awake. Don't you see it, my friend? I create sleep and dreams; myself, I can not sleep or dream. It is a penalty of the thought and work that has gone into the development of this scheme. I must have relief, being only human after all. I dare not rest unless I have a trusted co-worker to take over the reins. My automatons require constant watching and supervision . . . and I am very, very tired. . . ."

Suddenly the Oriental seemed to be an old old man. Unwittingly he had revealed the greatest weakness in his plan.

Stanley watched him narrowly. It was obvious that he was on the verge of physical collapse. A great, if misdirected, mind had urged him on, kept him going. But the human body is like any machine; it will stand up under just so much abuse and then is bound to give out.

"You wish to take me in as a partner, Doctor? Share and share alike—is that what you mean?"

"Precisely." Abdul nodded drowsily; the tables were turned. "I see no other way, and you are . . . the first. . . ."

Stanley thought he had at last succumbed to the fatigue that must be his. "And I, Doctor Nad," he intoned softly. "I refuse to be a party to any such ungodly scheme. I have other plans—"

But he had counted without the remarkable vitality of the Master of Dreams. Abdul, hearing his words, bounded to his feet and the eyes that had glazed with weariness were burning coals.

"Ivan! Pierre!" he spat out.

Fingers of steel gripped the back of Stanley's neck; great hairy arms encircled his shoulders and slipped down crushingly, pinioning his own arms to his sides.

He put up a good fight against these two huskies who had slipped up behind him, but to no avail. No man, however athletic, however determined, could prevail against them both.

A million sledge hammers smote the back of Stanley's head and he knew no more.

CHAPTER V

Victims of Illusion

WHEN next he was cognizant of his surroundings, he was aware of a marked change in his normal mental sensations. His perceptions seemed to be unusually acute; his memory of preceding events remarkably clear up to the point of his struggle with Abdul's two strong-arm automatons.

He had not the slightest knowledge, however, of what had happened since that time and was amazed to find himself standing in almost the identical spot in Abdul's drawing room where that event had taken place.

His sense of hearing seemed to have been intensified—that faint hum of machinery he had once before noticed was now distinctly audible. It was a not unpleasant throbbing sound, soothing somehow. And his eyesight had been improved; he could see objects at the far side of the room clearly and in minute detail. Even in the shadows of the cabinet its carvings stood out in bold relief.

Dr. Nad walked in and faced him, smiling cynically. There was no evidence of his former weariness.

Strangely, Stanley could summon up no animosity toward the man.

Abdul said, as if nothing had happened: "Suppose, my friend, we sit here and continue our talk."

It occurred vaguely to Stanley that he should raise some objection to this but he could not bring himself to do so. He did as he was bidden and waited in silence for his host to speak.

"I venture to say," said Abdul, "that you have not the slightest notion of what has transpired during your—ah—shall I say lapse of memory. You do not know that you have become my most advanced patient and are now in a peculiarly advantageous stage of the waking sleep."

Stanley's fingers wandered to the base of his skull where they encountered a small area from which the hair had been shaved.

Dr. Nad chuckled. "No, my friend, there is no wound—hardly a scar. Healing has been complete."

"How long then have I—"

"It is six days since the operation."

"Operation! Six days!"

"Precisely. And now I am sure you will more readily consider the proposition I made previously. But first I must show to you a few of the accomplishments of the past week. My work has been progressing admirably."

It was like one of the natural dreams in which the dreamer is conscious of his state and knows that his dream images are unreal yet is unable to dismiss them or to awaken. Stanley watched stolidly as the far wall darkened to invisibility. Then it was as if a curtain lifted there to disclose another room where a number of men were assembled at a long table. At the head of the table, talking forcefully, was a man with familiar features."

"Sir Clive!" exclaimed Stanley.

Abdul replied: "It is none other, my friend. But he is a new Sir Clive, a trusted lieutenant of the Master of Dreams. You will observe that his confreres are much disturbed at his speech. They do not approve. His mission here has failed—a thing I greatly desired. It means chaos in international finance."

"That will be of advantage to you—to us?"

Dr. Nad smiled at that last word. "Of a certainty, my friend. By stirring up discontent in all strata of society we shall bring about a condition where the world will be ready for a new dictatorship. Do you not see it?"

This seemed perfectly logical to Stanley. He was curiously thrilled when the conference broke up in disorder and with angry words flung back and forth between the participants. The scene then faded into darkness.

As if talking to himself, Abdul said: "The Britisher has served my purpose well. When he returns he shall die—for Mustapha."

This too left Stanley unmoved.

AGAIN the curtain of darkness across the room lifted. They were looking into a business office, evidently that of a man of note for it was most luxuriously

furnished. In the center of its broad expanse was a large glass-topped desk on which were three telephone instruments. A stock ticker whirred away beside the man who sat at the desk and coils of its white tape littered the floor.

"Another of my trusted lieutenants," purred Abdul. "Administrator of Peter Carton's estate. I might tell you that Carton's body was found in this same office—his own office—and the coroner's jury gave out a verdict of suicide."

For some reason this impressed Stanley as being humorous.

The man at the desk was shouting into one of the telephones: "Sell! Sell, I tell you. It's nothing to me what Carton would have done; I'm in charge of his affairs. Sell until the bottom drops out of copper."

Dr. Nad chortled. "It is thus we create a money panic. When all Wall Street, all the world, is paralyzed we shall buy in for a song. Do you not see it, my friend?"

Stanley saw and understood.

ANOTHER shifting of the dream image. This time, framed in the apparent confines of the far wall, was a scene outside some large manufacturing establishment. A great crowd of poorly clad workmen had assembled near a high fence of iron pickets. Perched in the back seat of an open automobile was a long-haired, red-faced individual who was exhorting them. Only a few of his wild words were needed to prove he was inciting this mob to riot.

"Vasilov," breathed Abdul with satisfaction. "Faithfully and well are you serving the Master."

The street before the picket fence was cobble-paved and narrow; it was packed from curb to curb with ragged humanity. Men, women and children were there, most of them showing the pinch of starvation in their haggard faces. But the heated talk of the agitator was getting results with them, arousing the worst and most reckless instincts of which they were capable. Sticks and stones began to fly. Windows in the brick wall of the manufacturing plant crashed one after another. A shot was fired and a watchman inside the fence toppled forward.

There was the sound of a bugle and a company of militia wheeled in from a side street. A stentorian voice commanded the crowd to disperse but was greeted with boos and cat calls. Another shot was fired from out the mob and a soldier, a young boy, spun round with his hands clutching at his middle, then slumped out of sight. The rat-tat of machine guns was quick to follow and Stanley saw wide furrows plowed through the press of screaming humanity as the vision faded from view.

"From my dreams comes reality," said the Master.

THE change of views was like the fading out and fading in of the talking screen. Only here the human beings imaged were more real and lifelike. They were three-dimensional beings who moved and spoke as if here in the flesh. They *were* alive.

Now the scene was in a court of law. A prisoner was at the bar, a low-browed, sullen fellow who stared defiantly at judge and jury and spectators alike.

Dr. Nad explained: "Another of my lieutenants, a thief and a murderer accused by a dozen eye witnesses. But the defense lawyer is one of my collection as well; so is the judge; so are three members of the jury. You shall see what a travesty is justice under the influence of the Master of Dreams."

The judge was delivering his charge to the jury. Much of the sense of his speech was lost upon Stanley, who was more intent upon the movements of Abdul's sensitive fingers along the arm of

his chair. But the final words did not escape him:

—"and I charge you, gentlemen of the jury, to render a verdict for this defendant, a verdict of not guilty."

Instantly the courtroom was in an uproar. The prosecuting attorney was on his feet, purple with rage, objecting strenuously. Hisses of the spectators mingled with the banging of the judge's gavel as the jurymen filed out of the box.

The view dissolved from sight and the far wall of the room was once more a wall.

A CURIOUS sense of pride in the Master's accomplishments suffused Stanley's new being. Here indeed was a master of science and a master of men, a man whose influence was to make over the world in accordance with his own desires. A man worth following.

With an army of these lieutenants of his they would obtain control of industry, finance, the courts, government itself. Unlimited power was theirs by virtue of this control of the subconscious minds of men. Unlimited wealth.

It was good to be a party to so great an undertaking.

"You see the possibilities, my friend?" asked Abdul softly.

A vision of exalted position rose before Stanley, of opportunity such as had never been his in the past. "I certainly do," he breathed.

Dr. Nad's eyes gleamed with satisfaction. "It could hardly be otherwise," he said. "And now, my friend, the time is ripe for your active participation in the scheme. You will proceed without delay to your own laboratory and return with your files of formulae and testing data."

"Anything in particular? There is a mass of data which is quite useless." Stanley had no thought of objecting.

"I venture to say you are correct in that statement. Suppose then, for the present, that you bring only the information relative to your discoveries in connection with the transmutation of elements."

"You mean that you wish to transform the baser metals into gold?"

"Precisely."

Something stirred vaguely in Stanley's controlled consciousness. "I had suppressed that," he said lamely, "on account of the danger of upsetting world economic conditions. The gold standard—"

"It is the very thing we want, my friend. We may use this process of yours as may seem most advantageous. Either to supplement our own resources by judicious production of synthetic gold or to debase the standard and set up a new one of our own. Do you not see what a mighty weapon this will become in conjunction with the power that already is mine—ours?"

"Yes, yes, of course." Nothing could have seemed more right and logical to Stanley at that moment. He prepared to leave.

A STRANGELY blank period ensued. Stanley knew that he had left the Master's presence, that he had left the huge building which housed his establishment. He knew that he had reached the brownstone front in West Seventy-fifth Street where his laboratory was located, but had not the faintest notion as to how he had arrived there.

There was something of extreme importance to be done, he recalled, something that had to do with the records of his own experiments. He passed the back of his hand before his eyes as he inserted his pass key in the lock. Memory of the thing he had come to do had left him.

Once inside the familiar hall, he proceeded dazedly up the stair to his own quarters. In the main laboratory he hesi-

tated, looking at the clutter of workbenches and electrical mechanisms that filled the room. A glimmer of memory returned.

There was something he must *not* do.

A man stood before him suddenly, a man of dark skin and beady eyes. A man with a neatly trimmed Van Dyke beard. It was Dr. Nad.

"The files," said Abdul.

"Yes, certainly, I recall it now." Stanley was not surprised to see the Master vanish into the thin air from which he had materialized. A man in the waking sleep sometimes knows he is dreaming but cares not that it is so.

Nothing was of importance now excepting to do the bidding of the Master. Stanley went through his files with quick fingers but soon found that the papers relating to the transmutation experiments were not in the big steel cabinet of the main laboratory. He remembered then that he had placed them in his safe, which was in another room—the carefully shielded room in which his super-voltage, high frequency work was ordinarily done.

And in that fortunate circumstance lay the reason for the turn of events which was to follow.

ONCE in the small cubicle which housed the most delicate and yet most powerful of his apparatuses, Stanley experienced a new sensation. It was as if he had two minds, one capable of thinking for itself and in a normal manner, the other utterly subservient to the will of the Oriental who called himself Master of Dreams. The former began to take precedence over the latter as he moved farther into the room; it was submerged in the will of the Master when he moved back toward the door.

With a sudden inspiration, Stanley slammed the door shut and was closed off from the main laboratory.

In that instant he was free. Regardless of what might have been done by Abdul's surgeons in that operation, he was his own agent now. His mind was his own and his thoughts unaffected by outside influence.

And the dream-life, he had been leading, was left behind; it was clearly remembered, but he now saw it for what it was—a nightmare of strange and terrible portent. The plight of Sir Clive and of Cullen struck him forcibly, and of those dozens, perhaps hundreds, of Dr. Nad's lieutenants who were now engaged unwittingly in the devilishly conceived scheme of their Master to wreck society and government.

Utter loathing of his own yielding to Abdul swept over Stanley, though he knew it was through no fault of his own.

He dashed to the controls of a compact apparatus that was on one of the workbenches. If what he suspected was true, there might be a chance of putting a stop to this destructive madness of the Master's.

CHAPTER VI

A Free Agent

THE apparatus with which Stanley began to work was a short wave radio receiver that was capable of tuning to the highest frequencies. Although the room itself was carefully shielded to prevent the entrance of such high frequency radio waves as might disturb the experiments in electronics usually carried out here, the radio receiver was connected to an outside antenna which permitted the picking up of impulses from all points of the compass.

It had been the shielding of this cubicle which had brought about Stanley's release from the dream control of Abdul Nad; the closing of the door had completely cut off the impulses responsible for a remote control of the consciousness. Enlightenment had come to Stanley on

that instant; the Master of Dreams was using radio to carry other and more complex vibrations which would have to be investigated later.

There was no time to be lost; of that the scientist was certain. Undoubtedly Abdul's instruments would register any interruption of the normal output of control vibrations, and he would know that one of his most valuable lieutenants was a free agent.

Stanley worked feverishly with the tuning dials of his receiver. In the extreme short wave range he encountered a carrier wave and soon had it tuned in sharply. One ten-thousandth of a meter was indicated by his calibration instrument. It was an inconceivably short wave on which to transmit any considerable amount of power.

With the sharpening of the tuning there came a series of clickings and a high pitched whine, then the voice of Abdul raised in white rage. At the same time a tingling sensation was manifest at the base of Stanley's skull. A blurred and distorted dream image rose before his eyes. He shut off the power from the receiver hastily.

No more was needed to apprise him of the nature of the carrier energy used by Dr. Nad. The tuning in of his radio wave had brought into the shielded room the very impulses from which he had so recently been released. And the means of communicating those impulses to the brains of Abdul's "patients" was likewise revealed. As to the nature of the superimposed vibrations which produced the waking sleep and the dreams, that would have to wait.

Stanley extracted from his pocket the tiny spheroid he had picked up from Sir Clive's bed. In a moment he had placed it under the microscope and found it to be a metallic casing made in two sections. He pried it open and there was revealed to his gaze an astounding assemblage of tiny coils and condensers. It was a miniature radio receiver.

THESE, undoubtedly, were limited in action to a small area. In George and Tom's, in Abdul's drawing room, in the adjoining bedchamber, one of the spheroids was sufficient to produce the waking sleep and the dreams within a narrow range. But when the Master desired to keep a "patient" under constant supervision he operated on him, inserting one of the capsules at the base of the brain where its received impulses might be communicated directly to the motive and sensory centers. It was a diabolically clever conception.

Stanley pawed nervously at the back of his neck. The infernal contraption would have to be removed at a later date. Meanwhile it was imperative that he devise some means of counteracting the effect of the radioed impulses of the Master of Dreams in order that he might get out from the shielded room and take some action.

There was a portable radio transmitter which he had used on some of his scientific expeditions, but it was not capable of tuning a wave as short as the ten-thousandth part of a meter. However, some slight modifications. . . .

STANLEY'S fingers worked with lightning rapidity. He replaced coils and condensers, inserted a more powerful oscillator tube. The batteries being partially exhausted, he installed new ones. The tubes lighted to full brilliance. A delicate adjustment was needed to bring the transmitted wave to the precise value required. But eventually the thing was done.

He strapped the portable transmitter under his arm and buttoned his coat over it, then stepped boldly out into the main laboratory. It was as he had anticipated;

the carrier wave of the apparatus was effective in blanketing Abdul's impulses. Outside influence could not reach through this blanket any more than through the insulated walls and door of the shielded cubicle.

Experimentally, Stanley switched off the power of his transmitter. Abdul Nad stood before him by one of the benches of the main laboratory. There was a sagging down of Stanley's will, a blurring of his senses. It was with the greatest effort that he managed to close the switch which once more provided the blanketing energy.

The vision of Dr. Nad was gone, but memory of his close-drawn brows and wrathful stare remained. There would be no further experimenting with that switch.

Knowing that he was safe from the influence, Stanley rushed to the street and hailed a passing taxicab. He had no plan of action but was intent only upon getting as quickly as possible to the mysterious warehouse building where he might face Abdul, and where Frank Cullen and Sir Clive and countless others were in danger. From it a devastating force was spreading throughout the nation to tear down and destroy the accomplishments of many decades.

When the speeding taxi reached Broadway, Stanley observed several things which were more than a little startling to him. Down near the kiosk of the subway at Seventy-second Street a huge crowd was gathered and it appeared that there was rioting of serious nature at this point. The traffic light at Seventy-fifth and Broadway showed red, but the cab driver went on through toward West End Avenue as if no light existed. Inside the cab, just beneath the meter, was a sign which read:

PASSENGERS IN THIS CAB RIDE AT THEIR OWN RISK. GREEN AND BLUE TAXICAB CORPORATION NOT RESPONSIBLE FOR HOLDUP OR ACCIDENT OF ANY NATURE WHATSOEVER.

"What's the idea?" he asked the driver.

"Whatdyu mean—what idea?"

"The riot down below. Passing the light just now. And this sign in your car. How long has this been going on?"

The driver looked around with amazement written on his heavy face. "Where yuh been fer a week—sleepin'?" he asked. "Don't yuh know the burg's gone nuts? And that the coppers walked out yesterday?"

"I've been ill," Stanley explained briefly and not altogether untruthfully. "But really, you don't mean to say that the New York police are on strike?"

"Sure I mean it. There was a hundred bank robberies in five days. Stick-ups. An' the cops didn't nab a crook. The Commissioner had 'em on the pan so hot fer a few days they got sore an' laid down on the job. Boy—an' fires. Wrecks in the subway an' on the Elevated. Suicides. Fer cripes sake *you* tell *me* what's the idea. Here I'm tryin' to knock out a few berries to keep the missus an' kids eatin' when every baloney in the burg seems to go off their nut . . ."

The driver talked on and on, glad of a listener. But Stanley paid little attention. He knew what all this meant; Abdul's control impulses were bringing results. Men walking in dreams were committing acts of outlawry and treachery for which they were not in the least to blame. The forces of law and order already were demoralized. Chaos was sure to follow.

Little of moment occurred on the ride downtown, although there were a number of narrow escapes from collision in the madly scrambled traffic. Here and there knots of men had assembled at street corners and in most of these gath-

erings considerable excitement was evidenced. Newsboys hawked their wares vociferously, waving sheets with screaming headlines. But this ended at Thirty-fourth Street; below that point traffic thinned and there were few people to be seen on the avenue. In a few seconds the cab pulled up before the warehouse, to which Stanley had directed his driver.

"Sure yuh want off here, guvnor?" the cabbie inquired doubtfully.

"Yes, this is the place." Stanley paid the man and was on his way to the wide double doors at the front of the building.

HE was stopped by a uniformed policeman who stood in the shadow of a narrow hallway beside the main entrance.

"Thought you fellows were out on strike," Stanley offered. Then, looking closer, he saw that the man was in the waking sleep. Reaching inside his coat, he increased the power of his small transmitter.

The officer blinked and stepped out of the shadow. "Lord love us," he exclaimed. "I've been sleeping."

"You have, and through no fault of your own," Stanley told him. "Have you no memory of what has happened?"

A stream of bitter invective dripped from the policeman's lips. "Damn for a numbskull," he wound up. "That whiskered devil up there put one over on me. He's had me hexed, that's all. And the things Tim Foley has done on the strength of his say-so is plenty."

Stanley said: "Listen to me, Foley; you couldn't help anything you may have done for him. He's using radio to make people helpless—to control them by means of his dream images and voices. Will you go in with me after him?"

"Raddio! Dreams! You've hit the nail on the head, my boy. And will I go in with you? Try me and see."

"Fine. But keep very close to me, Foley." Stanley was not sure of the range of his portable apparatus in neutralizing Abdul's waves, especially when so near to a transmitter which must be very powerful.

"I will that, my boy."

They went in through the entrance and, at Foley's command, were taken up by the elevator operator, who evidently suspected nothing.

From Abdul's drawing room loud voices were heard. Stanley pushed in close behind the big policeman.

"Here you, what's this all about?" boomed Foley.

DR. NAD looked up from where he sat in his favorite chair. Fury was in his gaze but a sort of sardonic triumph as well.

"Ah," he said softly. "So the wanderer has returned, and in a strange state. With strange company."

"None of your soft soap," growled Foley. "You're under arrest."

Stanley's eyes had been glued to a figure that lay writhing on the floor. It was Sir Clive and he was wrestling with an imagined adversary, battling as if for his life. Blood-flecked foam was at his lips and a nameless horror was in his eyes.

"Mustapha, you devil," he croaked. "Mustapha—I—"

"Foley, get Abdul—quick," yelped Stanley. He had taken in the situation in a glance. Sir Clive was in the waking sleep, was in the grip of Abdul's final effort against him. A dream image was to be his last assailant, his nemesis.

For the first time, Stanley saw that Dr. Nad's fingers were playing over the buttons of a control panel set into the arm of his chair.

Foley drove forward, a shot-loaded billy appearing in his hand as if my magic. The billy descended and Abdul slumped

over his control panel in a huddled heap.

Then a strange thing happened. The policeman turned on Stanley with a wild light in his eyes. "You've made me kill him," he gritted. "You're a murderer as much as I, man."

It was evident that Foley had moved outside the influence of the portable transmitter and was once more a victim of the waking sleep. Stanley moved in to meet his lunge, hoping to bring the blanketing energy once more to bear on his tortured brain.

But his first thought had been wrong. Something else had been the cause of Foley's reversion to his former state. Dream images sprang into being at several points in the room—servitors of Dr. Nad. Big powerful fellows who materialized out of the nothingness and closed in on them all. Images that Stanley himself observed and was powerless to cast out of his mind.

The portable transmitter was no longer effective.

Foley was taken in hand at once and was dragged from the room.

Abdul sat up. "So, my friend," he sneered. "You thought to best me at my own game. You sought to hinder me in my work, the work I had offered to share with you. I speak with authority and with a knowledge which is not yours when I say that you will live only to regret it. And regret it dearly." Foley's billy had missed.

Strive as he might, Stanley was unable to conquer this influence which had him once more in its power.

Observe, you scientist who gropes for a knowledge you will never possess. Observe this power of mine!" Abdul's voice was terrible in its intensity.

Unable to resist, Stanley turned his gaze upon Sir Clive. He saw the Englishman's opponent clearly now. It was the one he had called Mustapha, the man he had seemingly throttled to death on two separate occasions. Now Mustapha's claw-like hands were on the other's throat. Sir Clive was breathing his last.

"You see," gloated Abdul. "What you thought to prevent is coming to pass whether you will it or not. You thought to blanket my energy with others of your own devising. But you failed to take into account the possibility that my little spheroids are capable of receiving and utilizing radio impulses of more than one frequency. You have produced a wave which succeeded in neutralizing the previous frequency, but that wave of yours is no longer effective. The work of Dr. Nad goes on."

Stanley fought mightily to gain control of his senses. Though he had once more entered the condition of waking sleep, he was able to comprehend this thing he had been told. Abdul had merely retuned his transmitter by means of those remote control buttons . . . whatever that new frequency might be. . . .

CHAPTER VII

What's in a Dream

THEN began the most desperate battle of Stanley's experience. A battle of mind waged against matter, of his own will as opposed to that other will that was battering down his own, through the agency of those devilish impulses.

Under his coat, his hand was inching toward the tuning control of his portable transmitter. Each movement of his fingers required the utmost concentration of mind, a concentration that brought him actual physical pain. It was obvious that Abdul did not know that he carried the transmitter on his person or he would have been upon him.

Dr. Nad was over-confident, smiling up into Stanley's eyes with an aggravating air of triumph. Dream images were

rising up once more, but those searching fingers had found the tuning knob. The images grew more real and lifelike as Stanley managed to turn the knob ever so slightly. He turned the knob in the opposite direction and the images faded from view. In another instant he had found the new frequency of Abdul's transmitter. Again he was released.

The Dream Master's smile faded as Stanley's fist shot out. Once more Abdul collapsed in his chair, this time to remain silent and moveless.

Sir Clive seemed to be in his last agonies. But he quieted down when Stanley kneeled over him. His labored breathing became easier. He shuddered and wiped the froth from his lips. Stanley lifted him to a seated position.

"Feel better now?" he asked him.

The glaze was clearing from the Englishman's eyes. "Lord yes," he breathed. "The thing is done—Mustapha gone—and you—"

"I have an instrument here that frees us both," Stanley answered hurriedly. "But we must find the apparatus that causes all this. Find it and cut off its power. There are so many others involved in this net of the Master of Dreams. But you will have to stay right at my side; do you feel able to do it?"

"Yes, yes." Sir Clive got laboriously to his feet, then jerked himself erect and squared his shoulders. "You lead the way, sir, and you make take my word for it I shall be by your side. That devil of an Abdul—he has used an ancient feud to persecute me. This Mustapha was his brother and he had an idea that I was responsible for his death in the desert many years ago. All of which was nonsense, you hear? Mustapha was responsible for this—" The Englishman waved his crippled arm jerkily. "—but he was slain from ambush by his own men. Strangely, the visions, that came to me of throttling the man, were the very wishes I harbored against him many years ago. Wishes that never were carried out. You believe me?"

"I do indeed." Stanley could not help but believe. He had wondered about this and now had something else to think about. The visions, some of them at least, must be of the nature of recurrent natural dreams and conjured out of the victim's own consciousness by the radio apparatus of Abdul's—apparatus he was more than ever anxious to see and examine.

Swiftly, though it must be said inexpertly, they tied Dr. Nad to his chair and hastened from the room. Stanley dared not manipulate any of the control buttons of Abdul's mechanisms for fear of working harm rather than good to his victims.

They followed a maze of passages leading in the general direction of the rear and lower part of the building. The sound of machinery eventually came to their ears.

A number of Abdul's "lieutenants" were encountered on the way but these were stupidly staring automatons, obviously being under no control at the time. They were waiting patiently in their waking sleep for whatever orders might issue from the Master of Dreams when he should choose to use their services.

Stanley smiled grimly. If he was successful those orders would never be forthcoming.

Then they had come into Abdul's laboratory.

IT was a large room cluttered with mechanisms, the most familiar of which was a high-power short-wave radio transmitter. Stanley made haste to pull the switch of the motor generator which furnished its power. The huge vacuum tubes of the apparatus faded to a dull red glow and then went entirely dead.

"Now those others are released," he said to Sir Clive.

He switched off his own portable apparatus and stared thoughtfully at the Englishman. It was evident that no untoward effect was left to either of them.

Sir Clive stared in return, but at the apparatus. "Is this what has been doing all of the damage?" he asked incredulously.

"It is. And listen, Sir Clive: those other men down below—do you remember how to find them? Are you able to go there and gather them here? It is important that they know of this at once."

"I do; I am." The Englishman turned to leave the room and by his resolute bearing it could be seen that his courage and most of his normal vigor had returned.

"Cullen, especially," Stanley called after him. "And the surgeon who performed the operations. As many of the rest as possible."

He turned his attention to the apparatus when Sir Clive had left. And his first act was to short circuit the motor generator on the input side, using a heavy pinchbar he picked from a workbench for the purpose. There followed a blinding flash and he knew that the apparatus was out of commission for some time to come.

After that he examined in amazement the auxiliary apparatuses of the radio. There were a number of complete, television-scanning mechanisms which were coupled to motion picture projectors. The sound recordings of the films were connected directly to the radio by means of pickups and microphones which would provide for a complete "talking movie." In this manner some of the images were transmitted to the minds of the victims.

Other queer looking machines likewise held recorded impulses of some sort which could be radioed. Although this apparatus was quite unfamiliar to Stanley, he had a suspicion that the recordings were of thought impulses. It was a mechanized and recorded telepathic means of impressing distorted thoughts on minds ordinarily normal. Later, when he had more time, these instruments would be dismantled and their workings analyzed.

Then there were numerous cables which led to wall conduits, these being control cables and obviously connecting to numbers of remote points in the establishment, from which Abdul might operate his dream producing machinery.

Other apparatus there was, whose purposes and uses Stanley could only conjecture. Delicate mechanisms, these were, and like nothing he had ever encountered. Some held crystal balls like those of the so-called mystics and seers. All were well worth investigation and all had something to do with this amazing system which had been developed by the Master of Dreams—all of absorbing interest to men of science.

Cullen, entering, interrupted Stanley's thoughts. The reporter's eyes bulged as they took in the assemblage of mechanisms before him.

"Holy Smoke!" he ejaculated. "What's all this junk?"

"It's Abdul's dream-control machine, incorporating a radio which sent out the waves that made us all see and do the things we did. It is a marvelous but devilish mechanism and—"

"Hold it, hold it, brother," said Cullen excitedly. "Hold it for later. It'll be the swellest story my sheet ever printed."

"No doubt of that. But you sit tight, Cullen, and keep your eyes and ears open. Here come a few of the other 'patients.'"

Foley entered with the surgeon, who was now recognized by Stanley as one of the most noted members of Park Medical Staff, Dr. Randolph Henry, specialist in brain surgery. Behind these two were others, a captain of police, a railroad executive, a prominent banker—all men of standing in their various occupations and

all now released from the power which had made them tools of the Master of Dreams.

STANLEY held them off as they crowded in, pressing him with a barrage of questionings.

"Just a moment, men," he said incisively. "There are many things to be done in connection with this matter and they must be done without delay. I will tell you that the man whom you have known as Master is the creator of this diabolical machine which has controlled all of you by means of dreams induced by radio impulses. Each one of you now has a miniature radio receiver embedded at the base of your brain and it is these receivers which have made you subject to the control. Dr. Nad is disposed of for the moment and his apparatus is inoperative. Our first move must be to turn the mad Oriental over to the authorities. There are enough representatives of the police department right here to take care of that matter. Then all of us here who have been subject to Dr. Nad must be operated upon for removal of his spheroids."

A stir swept over the assemblage, which was swelling rapidly with new recruits from the lower regions.

But Stanley went on, turning now to the surgeon. "Dr. Henry," he asked, "there will be no difficulty in removing these spheroids?"

"None whatever. The operation is quite simple and is free from danger of complication. At Park Medical we shall—"

"Enough, doctor. Gentlemen, I believe that will satisfy all of us, as to our eventual complete freedom from this thing which has made of us temporarily menaces to society. Yes, menaces to civilization itself."

"How about the crimes that have resulted?" a voice spoke up.

"When all the evidence is in, all of you will be cleared. Only Dr. Nad is responsible and only he shall be punished. The evidence lies in this apparatus and in the testimony of all who know the truth and have been involved in Nad's schemes through no fault of their own."

"Look out!" shouted Cullen suddenly. "Abdul has got loose, sure enough. He's there—behind you."

Stanley wheeled to face the Oriental, whose features were contorted with rage. In Abdul's hand was a cylinder of metal which he waved menacingly toward the crowd.

"Back, you fools," he snarled. "You deceive yourself when you believe that the Master of Dreams is to be apprehended. My secret will die with me—with you all."

Foley's pistol spoke once and Abdul pitched forward. But the shot had come too late. The metal cylinder—an incendiary bomb—had been flung among the mechanisms. Flame belched across the laboratory and there was a stampede toward the exits.

Abdul had spoken the truth; his secrets were to die with him. He had won his wager with Sir Clive but had lost the stake. . . .

Later, when the warehouse building was a huge funeral pyre, four men stood across Eleventh Avenue, a little apart from the press of curious onlookers. These four were Stanley, Cullen, Sir Clive, and Dr. Randolph Henry.

"All escaped, I believe," said Sir Clive.

"Foley assured me that Abdul was the only one left behind," said Stanley solemnly.

Cullen stirred restlessly and said: "I ought to go. Boy, oh boy, what a story!"

"But the evidence," Sir Clive objected. "It is destroyed."

Stanley said regretfully: "Much of it, yes, but not all. More than anything I know of, I should have liked to delve

deeply into the mysteries of Dr. Nad's apparatus. That now is impossible. But I feel there is nothing to fear for any of the innocent who were Abdul's tools. It is within my own power to reproduce at least the radioed voice-vision images. That is a fairly simple development of television, and we shall have that much proof to clear those who were the victims. Besides, there is the evidence of the spheroids—Doctor Henry's testimony will clear up that point. And the testimony of a hundred or more of prominent people who were the real subjects of Abdul's machinations. No-o. There will not be much difficulty in clearing up the matter, at least such is my idea."

"Not much," agreed Dr. Henry.

"And wait till you see the spread in my sheet," Cullen gloated. "My slant is that that'll draw first blood; then the rest'll be easy."

THE mobs which lined the Avenue scattered as a wall of the old warehouse crumbled with a deafening crash. Stanley, looking into the inferno which roared over there, mused on the temptations which beset the man of science on every side. To him it was a pity that a genius so great as Abdul's had been misdirected. A pity that the vast amount of labor which had gone into his researches and development had to be put to such disastrous use—worse than wasted. A pity that the apparatus itself had been destroyed.

Still, it was probably better so. Better that the secret had died with its discoverer, or the major part of it. The less known of such things the less chance of a duplication of the events, which, fortunately, were now to be feared no longer.

But Stanley would have given his right eye, or at least a finger, to have had the opportunity of playing with those telepathic machines and some of the others, of examining them, dismantling them, testing them; or of reading a long and exhaustive report to his Society. . . .

He brightened—there *were* things he could do. Experiments in his own laboratory which might clear up some of the loose ends of the case. He might learn how it was possible to switch control from one to the other of a group of persons at will or to include the entire group in the waking sleep and the dreams. How it was that Sir Clive had left George and Tom's still under control while Cullen and himself were released—perhaps the Englishman had had a second spheroid in a pocket, planted there by Abdul at the time.

Stanley would determine how it was that Sir Clive had once spoken with the voice of Abdul—how the spheroid in his own pocket had been ineffective for a time—how dream images could strike effective blows or strive to strangle a man with fingers that did not exist.

He turned to look for his friends; found they had been separated during the backward flight of the mob of onlookers. The fire still raged with a fury which sent a blast of heat across the broad Avenue. Stanley retreated still further.

And then he saw Cullen, running for the nearest telephone.

Thinking of the black headlines that would grace the next edition of the "Blade," Stanley grinned.

THE END.

In 1999

By
BOB
OLSEN

AS THE OPTIMIST SEES IT:

In nineteen hundred ninety-nine
This world will dandy be, and fine.
There'll be no crime—there'll be no war.
Space ships to Moon and Mars will soar.
All work will be by robots done.
Life will be just one game of fun.
On food synthetic folks will dine
In nineteen hundred ninety-nine.

AS THE PESSIMIST SEES IT:

In nineteen hundred ninety-nine
Of peace on earth there'll be no sign.
All men will murder, fight and steal,
And, crushed 'neath despot's cruel heel,
Will grovel, cowering in fear
Of famine, drouth and monsters queer.
There'll be no beer—there'll be no wine
In nineteen hundred ninety-nine.

CONCLUSION:

Thus prophets twain the future see.
To choose is up to you and me.
Your guess will be as close as mine
In nineteen hundred ninety-nine.

Adventures of Posi and Nega

We do not know how our readers feel about Posi and Nega, but the Editors of* AMAZING STORIES *have felt quite a warm personal interest in the adventures of the little pair, and now the story of their exciting lives is continued, and judging by the illustration we imagine they are having quite an exciting time.

By JOE W. SKIDMORE

Illustrated by MOREY

AGAIN, with a growing realization of my limitations, I record the atomic emotions and adventures of Posi and Nega.

Again, my faltering pen is inspired by a profound and reverent wonder at the vastness of things—and the smallness of electrons, whirling and speeding orbitally in an incomprehensible but well-ordered plan of life and motion, all of which is not a matter of mere chance or accident, but certainly a Master Intelligence, omnipotent scheme, directed with precise mathematical law; from the flight of a tiny electron, to the mightiest star-sphere in its timed and orderly circuit!

With Gulliverian inelegance, you may think, I narrate the perils of Posi and Nega through a murder that takes the little beings into the alimentary canal of a human infected with typhoid fever—and finally into a sewer!

But that is part of life!

Mayhaps another time, Posi and Nega will live in the brain box of an Einstein, Plato, Sir James Jean, Spinoza, Millikan, Joan of Arc, Mme. Curie, Paracelsus, Bruno, or Archimedes.—And we might share the thoughts of the mighty—Atlantean thoughts!

A temerarious idea, indeed! Shall we dare it?

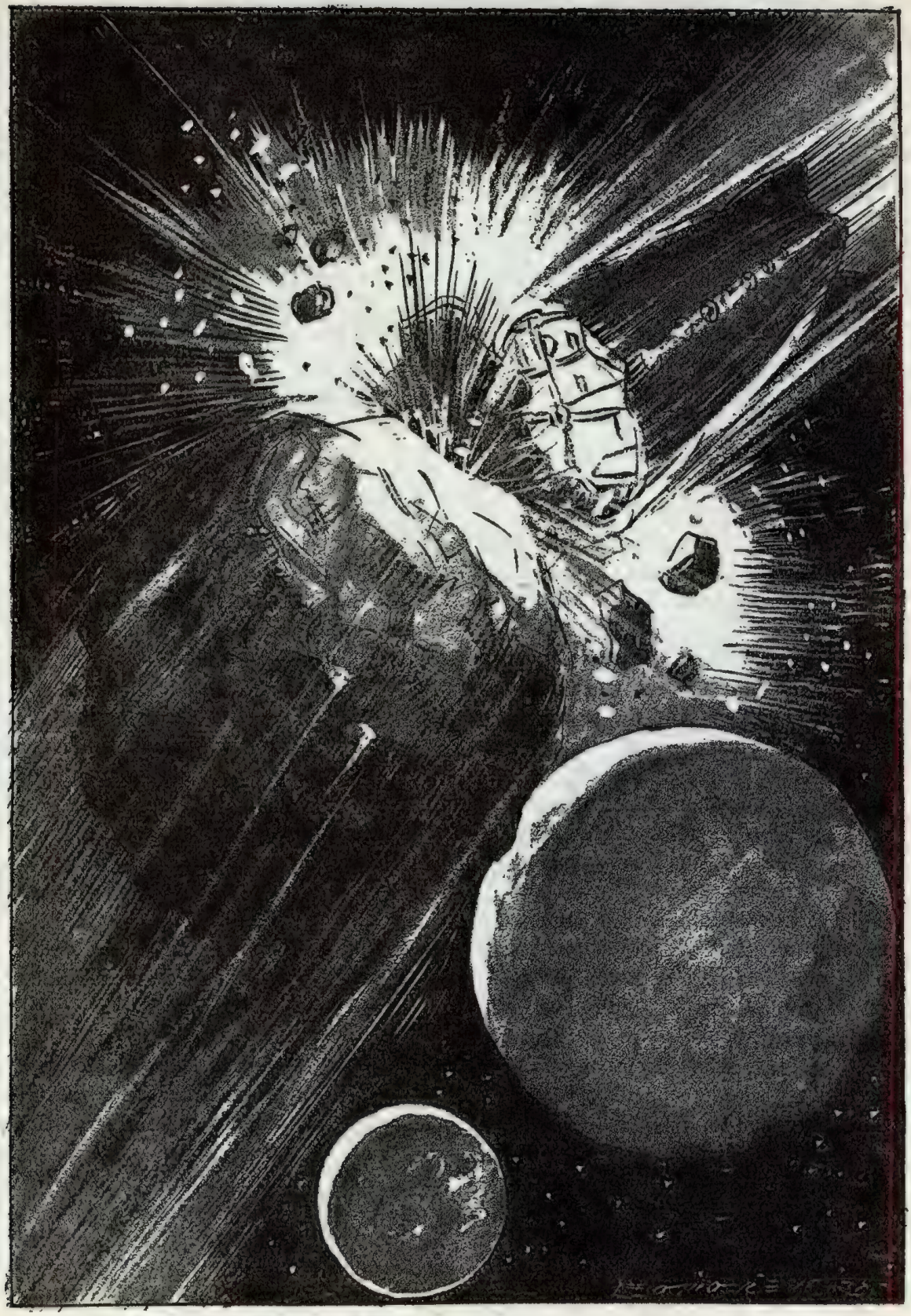
"All knowledge begins and ends with wonder." (Coleridge.) —J. W. S.

"GREAT COSMOS!" rasped Posi, the positive electron. "We're in Millikan's deadly Alpha Ray machine. The scientists are trying to smash our atom with the powerful energy of the fearful device. It——"

"Will the rays destroy us?" shrilled Nega, the radiant negative orbital electron. Her hissing flight became a whistling threnody as her color vibrations turned to a deep, agitated purple.

"Destroy us?" shrieked Posi. "Of course they will! If the horrible rays strike our iron nucleus squarely, we are doomed. The scientists are trying to discover what we are made of. If only we could talk to them! What we could tell them! This device of Millikan's will hurl an energy of three hundred million volts among us. It will rip us apart!"

Woman, more sensitive, of finer grain than man, is the more emotional. But when crucial dangers threaten, a Spartan courage and fortitude is woman's.



A meteor of frightful size collided with the space car. Meteor and the fused space car plunged to the planet Earth.

"Goodbye, Posi," purred Nega. "It's been wonderful to love you. We've had many strange adventures together. If this be the end—let's be brave and show our orbital pride!"

"Cosmos!" impulsed Posi in harsh, fearful vibrations. "They're turning on the rays! Hold fast, my darling Nega! Farewell!"

Came a mighty blasting of searing, streaking flashes of exploding energy, sworded with millions of rending, ripping volts. Atoms, nuclei, electrons smashed—incredibly small solar systems of planets, suns and stars gone mad! Scientists disintegrating atoms indeed! The smashing of worlds—of universes!

An uncountable, whirling, spinning debacle of electrons suddenly crashed out of their orbits, to dart fast as light with the deadly, streaking rays.

"Goodbye, Posi!" screamed Nega, across the vast distance that separated them; a distance as far in relation to their respective sizes as the spaces between planets of the human universe. "Hold me tight—with all the power of your magnetic pull!"

WITH the first cruel, smashing, disintegrating rays, Posi and Nega were blasted from their orbits—hurled through space—a vast void of space.

Smash! Crash! Posi and Nega knew no more!

Erudite scientists stared with gleaming eyes through powerful lenses. High speed telescopic cameras clicked at terrific speeds.

"A most interesting experiment. I believe we secured some splendid films."

The great and brilliant scientist, Millikan, was highly pleased.

* * * *

Life—whirling and vibrating, actuated by that mysterious force that gives life and impulsion to electrons—went rotating on—and on—numerically and orbitly guided by that mighty Intelligence that guides the tiniest electrons—and the greatest star spheres in their incredible and orderly, timed flights.

Posi and Nega were born far out in the endless voids of space—mothered by the cosmic rays and fathered by that incomprehensible energy that gives life and motion to electrons.

Human minds marvel at the intricate scheme of atoms and electrons—wonder at the marvelous rhythm and infallible, numerical composition of matter—amaze reverently at the smallness of things—and the vastness.

Posi whirled into existence, a positive electron, sometimes called by human scientists a proton. Nega was born a negative electron. The two were first met in the mysterious realms of space, in a nucleus of helium gas. In the first eons of their love, they lived a carefree and happy life. Plenty of room to oscillate and vibrate weird, strange dances of love. Not crowded; in that nucleus of helium with only four positive protons, with two negative electrons, free and orbital, circling and balancing the nucleus.

Two of the helium protons were neutralized by two of the electrons, leaving two protons free to attract and hold the whirling shells or orbits of electronic atmosphere surrounding the nucleus. This nucleus of the helium atom is composed of the famous alpha particles observed in radium emanations and used so extensively in building up heavier atoms.

Posi was 1840 times heavier than the radiant, vivacious Nega; but the inscrutable Intelligence that directs all life and motion has vested negative electrons with a miraculous power. In the composition of matter it usually requires but two tiny negative electrons to balance two of the larger positive electrons.

POSI, the positive electron, was male; Nega, the female or negative—as it is in human life.

Posi was many thousand years older than Nega. He had lived in numerous elements on various planets. After meeting the beautiful Nega in the atom of helium, far out in space, the two had experienced a series of exciting and interesting adventures.

First, they barely escaped the horrible danger of being drawn into the blazing furnace of the sun. Had they been drawn into the terrific temperature of that luminary, to feed its ever diminishing mass, they would have exploded. That is, the nucleus or positive charges of the atom would have been exploded, helping with their tiny bit to form a wave or pulse of energy. This transformation of electrons into energy adds to the heat and light of the sun—prevents its blazing, exploding furnace from turning cold and freezing the entire solar system.

Fortunately for Posi and Nega a giant space car picked them up and whisked them from the danger of Phaëthon's furnace. A meteor of frightful size collided with the space car. Meteor and the fused space car plunged to the planet earth. For years Posi and Nega led a very dull existence in the vast meteor, as a part of an iron atom, deep below Arizona soil. Then a party of scientists, ever searching for truth, dug a shaft to the meteor. They took samples for experiments. Dr. Robert Millikan, leader of the group of splendid scientists, took a minute particle of the meteor to his laboratory and conducted various tests.

Posi and Nega were among the countless millions of electrons that made up the mass of that tiny fragment of meteor.

* * * *

Posi, the male, and more rugged of size and vigor, was the first to experience the exquisite pain of returning normalcy.

With infinite slowness the consciousness of Nega became active. The first thought of the little negative electron was that her mass or body had been suddenly precipitated into a new life—or dimension. With a mighty feeling of relief, she could tell that the whistling, flashing speed of her orbit was whirling as usual. Her mind cleared with amazing rapidity and to her great astonishment she saw that indeed her conditions were changed; now crowded. Suddenly there burst upon her realizations the familiar tones of Posi.

"Hello, Nega, old girl," shrilled Posi. "Well, we came through that in fine shape."

"Where are we?" interrupted Nega, still glowing with a deep, vibrant, worried purple.

"I thought you'd never snap out of it," hissed the irrepressible Posi. "We had a great stroke of luck. When Professor Millikan turned his Alpha Ray machine on us, it hurled a voltage of three hundred million volts into our iron nucleus. Something ought to be done to stop these scientists experimenting with us electrons. It's not fair to bombard us with that fearful potential. Fortunately, we electrons are hard to destroy."

"But what happened?" whistled Nega.

"There you go, just like a woman," snarled Posi. "Don't be so darned impatient. When the blasting, searing rays of energy traveling as fast as light struck our nucleus, we were exploded and hurtled along with the rays until we crashed into the thick lead lining of the Alpha Ray machine. And what happened, my lovely but impetuous Nega? We have become, by some mysterious transmutation, a part of a nucleus of lead."

"What is lead?" vibrated Nega.

"YOU stupid female, negative electrons never seem to learn anything. It was only four hundred years ago that I

told you lead is the eighty-second element, according to the human classification. Now get this straight. Lead has two hundred and seven protons. Eighty-two free, orbital electrons, like your own darling self, and of course there are one hundred and twenty-five bound electrons. This is going to be a crowded existence. There are too many electrons in a lead nucleus for comfort. Life is going to be a mighty dull proposition with such a dumb cluck as you. You—"

"Just a moment," hissed Nega, glowing an angry violet, "you are only a positive proton, and even if you are one thousand eight hundred and forty times heavier than myself, you're not so much. Positive proton, indeed! You should call yourself a moron instead of a proton. I notice that there are plenty of young, handsome, positive electrons in this nucleus. I think life is going to be a very interesting proposition."

"Don't fly out of your orbit," purred Posi, always politic with the decorative sex. "Let's try to get along, for we may be tied up in this existence for many thousands of years. After all, you're the sweetest, nicest negative electron I've met in the five million years of my life, and I've met a great many, even if I'm only a young chap."

"You're not so young," vibrated Nega, swinging coquettishly a bit from her flashing orbit. "The color of your orbit has become a silver grey in the last thousand years."

"Listen, you contrary, negative female! We electrons never get old. The mysterious electric energy that vibrates through our countless billions provides us with constant energy and renews our vigor. But let's quit quarreling and settle down to a dull existence."

Would that this weak pen possessed inspired power to describe the wonder of that mysterious force; that infinite cosmic energy that permeates the entire universe; that mighty Intelligence that directs motion and time in so orderly a fashion, even to the incredible detail of matter's numerical, atomic composition.

Time, that mysterious force—or is it a force—flowed relentlessly on in its steady dimensional stream. Life, vibrating, incomprehensible, but mighty of purpose, continued its vast, relentless wave of evolution.

Posi became exceedingly savage and irritable as time flowed on—and on. The positive proton carried on violent flirtations with the many negative electrons in the nucleus of lead. All this to the supreme indignation of Nega.

"You're a hopeless flirt," snapped Nega, flashing her best and most becoming crimson and increasing the amazing speed of her orbital flight. "You've carried on a love affair with every negative electron in this nucleus—you wretch!"

"Well, Nega, old sweetheart," purred Posi, with arrogant pride, "I can't help it if all the dames fall for me." Posi smugly fancied he was the Tithonus of the atomic universe.

"WAIT!" hissed Posi, suddenly. "Here's an important message. Millikan is getting ready for another fearful experiment!"

"How do you know?" whistled Nega.

"Do you remember Potor, the positive proton, that lives in Millikan's brain? Potor is a mighty proton among electrons. He is part of a phosphorus nucleus and lives in a nerve cell in Millikan's *corpus callosum*. He—"

"What is phosphorus?" interrupted Nega, unconsciously slowing the speed of her orbit.

"Of all the dumb females," glowed Posi, with an angry scarlet. "Say, didn't I tell you to watch your circle speed? Haven't you any orbital pride?"

"I'm sorry," whispered Nega, glowing

with an embarrassed pink. "But what is phosphorus?"

"Phosphorus," sang Posi, eager to show his academic, technical knowledge, "is the fifteenth element in atomic number and thirty-first in atomic weight. Here's a nice little rule for you to keep in mind. To discover the makeup of any element, take the full number of the atomic weight. That represents the number of protons in the nucleus, as in the case of phosphorus, thirty-one. Now, the number of free, orbital electrons is represented by the atomic number, in this case of phosphorus, fifteen. The nucleus, therefore, consists of thirty-one protons, and the same figure less fifteen leaves sixteen nuclear electrons. The number of the weight in any element is accepted by human scientists as the number of protons. Is that clear to your primary mind?"

"Yes," Posi," lied Nega, with feminine shrewdness, "but what was that message?"

"I've reestablished my line of comunication along countless billions of electrons through gaseous and solid elements till I've a direct route along the energy that flows through electrons with Potor, in Millikan's brain," explained Posi. "Potor says Millikan is going to produce absolute zero in this damnable device. He is, no doubt, experimenting on some element, but as we are located directly at the surface of this lead covering or lining, we will be subject to the full effect of the terrifically low temperature."

"Is it serious?" vibrated Nega in an anxious pitch.

"I'm worried, my sweet," from Posi, with agitated, nervous vibrations. "This looks like bad business. These scientists, led by their greatest—a Dr. Robert A. Millikan—are getting ready to try a fearful experiment on us. A great man—this fellow, Millikan. Potor says he is one of earth's greatest scientists. Billions and billions of us have begged Potor to try and influence Millikan against his experiments."

"Why! Can electrons communicate with humans?" shrilled Nega, in surprise.

"No, and yes." Posi's bright red dulled as he considered this mighty question. "You see, in the fine, keen brain of Doctor Millikan there are countless billions of protons. With the leadership of this powerful Potor, they will all set up certain vibrations in unison. These vibrations are intended to act on the brain cells in Millikan's center of intelligence. It probably won't work. Protons for many thousands of eons have been trying to get a direct contact or influence with humans—but there is some mighty barrier—some vast obstacle that cannot be surmounted."

"Then why try? Has it ever worked?"

"THERE have been many, many cases where the great united influence of protons has in a slight measure affected the consciousness of a human. But only so slight that it merely caused the human to experience thoughts foreign to the subject's mind. Dreams—memories of the subconscious mind, the humans call such vagrant thoughts. Some day, my radiant Nega, we will break through and establish a perfect line of thought and communication with these human scientists." Posi's speed increased as he waxed eloquent; weaving garlands of verbal blossoms. "And then what a civilization! What we electrons could tell humans! What wonders of chemistry and new structures of elements could be wrought! For the human race, it would be almost the ultimate. They could provide for their every need—except the needs of the soul."

"The soul?" interrupted Nega. "What is a soul?"

"My child, I do not know. If I could answer I would be the greatest philoso-

pher in the atomic universe. Even the wise proton, Potor, does not know. He says the best definition is that mysterious force and intelligence of life controlled and actuated entirely by the Mind of the Universe."

"It's all too puzzling for me," whined Nega. "But tell me, are the protons in Millikan's brain trying to influence him to stop his experiments on us?"

"Yes, they are working now. Billions of them trying to send vibrations into Millikan's consciousness. But I don't suppose they can do anything more than give that splendid scientist a bad nightmare. Strange about these scientists! They have found that plants, trees and flowers have a high form of life; certain intelligence with definite powers of movement and reactions. Yet their useful, active minds have never conceived that we electrons—the highest life form of motion and vibration—have an advanced form of life! Some day, though, we will communicate with them."

"Why do they try to hurt us in this experiment?"

"Foolish female," shot Posi. "They're not trying to hurt us. They don't know. They are laboring at the bottom of a vast sea of yet undiscovered wonders. Because of these earnest scientists, humans are advancing with wonderful strides. These fine, brave souls have looked into our atoms with their microscopes and into space with their telescopes. They have established some basic facts. Their discoveries and proofs have saved humans from the yoke of cruel, intolerant creeds and superstitious, ignorant religions. With microscope and chemistry they have almost vanquished the germs and diseases that attack their soft, weak bodies. Marvels of science, invention and knowledge are theirs, because of these scientists who dared to look into the atom and stars for reasons. But what's the use of talking to you? You don't understand. I'm going to listen in for still more news."

Nega, for once in her busy, whirling, glowing life, was silent. She considered well the cogent words of Posi. She felt suddenly that no terror would ever again disconcert her. After all, she was such an infinitely tiny part of a vast and orderly scheme. Her Atlantean thoughts were shortly interrupted.

"Nega, my sweet one, Potor has just sent out a general alarm. He says the attempt to influence Millikan was a dismal failure. Millikan told a friend his dinner had not agreed with him. A fine piece of business! They've built a great machine to produce a low temperature, about two hundred degrees below centigrade; near to absolute zero. Don't you see! We will be in about the same condition as we were in interstellar space—just before I first met you."

"What are they trying to do?" squealed Nega.

"POTOR says the scientists have at last guessed that the production of absolute zero makes possible the transmutation of metals. You understand, as the cold comes we will lose our speed and power. I will not be able to attract or repel you. We will be forced together by presure to form a solid, compact mass, where the swirl of electrons around their nuclei will definitely cease. We will become neutronium, or some such element. In other words, we will become so compactly crowded that a cubic inch of such an element would weigh a million tons! Life would be unbearable in such a crowded condition. But don't worry. Nega. They can't keep us that cold forever, and when we warm up, we will expand, start new orbits, and cause new elements to form."

"It's getting cold now," moaned Nega. "Look!—all the electrons are slowing, and they do not glow brightly."

"Yes, Nega," cried Posi slowly and

with difficulty. "We're losing energy very fast. I'll do all I can to hold you to me. Hold tight, my sweet. We'll come through. We—"

His vibrations ceased, and Posi felt his round body crushed in by other masses. The contact was strangely repulsive. He struggled desperately to repel them, but it was useless. He had no power—no energy. Cosmos! That tiny violet electron was Nega! Her trim, little body felt strangely comforting and pleasant. With all his fast dissipating energy, Posi concentrated on one last powerful attraction to Nega—

Then suddenly life seemed to cease. Billions and billions of electrons massed crushingly—became inertly solid—but mighty electricity, incomprehensible and vibrating, continued to flow through electrons!

Truly the fall of the sparrow is well noted when the orbit of the electron's electron within an electron is ordered and guided!

The mighty law that directs an atomic count to each element reigned supreme! The scientists eagerly searching for new truths allowed their refrigerating machine to warm up. The law of motion and energy prevailed, and the lifeless globes of Posi and Nega began to struggle and move—slowly at first—then faster and faster. With warmth and motion the electrons began to repulse others and enlarge their orbits. Thus the entire mass expanded. In a miraculously short time Posi and Nega were spinning away the same as ever.

The inevitable miracle of matter had again occurred!

Man can neither create nor destroy energy, but he may change it from one form to another!

Posi and Nega were again positive and negative electrons within a mass of lead! The mysterious force and law had restored them to their original status.

"Well, my dear Nega," purred Posi, "we came through that in fine shape."

"Oh, Posi," rasped Nega, still wobbling and oscillating, "it was terrible. How were we restored to life after our motion ceased and we became jammed together?"

"Because, my sweet but ignorant Nega," sibilated Posi, verbose and carefree now that the danger was gone, "lead, normally a poor conductor of electricity, offers practically no resistance to the energy flow of electricity when reduced to a low temperature approaching absolute zero. I suppose it's because when our atom is down almost to absolute zero, our electrons, traveling around the proton or nucleus several billion times a second, change their orbital flight to a straight line, which aids electricity in its flashing, speeding journey from positive to negative. And, my dear Nega, electricity is life for us. Well, anyhow here we are again in our nucleus of lead."

"I'm tired," sighed Nega. "Think I'll sleep a few years. Watch my orbit, please."

"Good night, Nega, old girl," shot Posi, glad for the chance to flirt with Trona, a fine, plump, negative electron in their nucleus. "Oh, hello there, Trona. Swing in a bit. I want to tell you how lovely you are."

"Oh, Posi, please tell me more about this planet, earth."

Nega glowed a coquetish rose as she asked the favor. For a considerable time she had been angry at Posi's attention to the shining Trona, and had refused to talk until she asked for the information about earth.

"Oh, so you're ready to talk now, are you?" snarled Posi. "I always have said, 'When a woman gets sore, just let her alone, and she will soon snap out of it.'"

"Don't scold, Posi. Tell me of earth

and its humans. What are these humans?"

"I'm glad you ask me that, Nega. I've lived on several planets, and the people who live on earth are my favorite people."

"People?" asked Nega. "What are people?"

"PEOPLE—humans," began Posi, pausing to study for suitable words, "are living bodies that inhabit planets and stars that are cool enough, but not too cold. They have legs for locomotion and the most wonderful hands, and a certain sort of intelligence that is naturally not so highly developed as ours. Of course, they have the fearful handicap of living only about seventy-five years. You know, Nega, that intelligence develops with time, experience, and observation. I've lived thousands of years and am still young—very young, my adorable Nega."

"How large are the earth people—or humans?" purred Nega, now very much interested.

"That's hard to explain to you, Nega. You're such a child," began Posi. "Let's see,—I have it. You have a fair idea of how large our atom is? Well, the sum of ten atoms raised to the twenty-seventh power represents about the mass of an average human."

"My! How large! shrilled Nega in amazement.

"Not at all large, Nega," laughed Posi. "Humans are only midway between the atom and the star. The mass of ten humans raised to the twenty-eighth power would equal the mass of an average star."

"Is the planet earth a large one?"

"It's quite small," informed Posi, proud of his knowledge. "The sun is 334,500 times as large as the planet earth, and the star Antares is ninety millions of times larger than the sun."

Posi turned to one of the other protons who had called to him, and the two talked in violent and excited vibrations. Nega swung in a bit, but her younger, untrained ears could not catch the import of the conversation. She could plainly tell that something important had happened. Finally her impetuous nature could not be restrained.

"What's the matter, Posi?" she impulsed.

"Matter enough," sizzled Posi. "Well, it had to be. It's come at last."

"What has come?" demanded Nega anxiously.

"Potor says," impulsed Posi, "the scientists have worn out this experimental machine we're in. It's going to be dismantled and sold for junk. Think of that, Nega. I, Posi, who have lived for millions of years in many elements on different planets, to be sold for junk! It's an outrage—an insult! I wish I could talk to these human scientists just once. I—"

"Calm down, big boy," soothed Nega. "You're not the only electron in this nucleus."

Posi silenced to a glowing, sullen rage.

A human philosopher has written, "Hell hath no fury like a woman scorned." But the furious rage of Posi knew no bounds. Dido, the ancient Tyrian princess, dancing out her wrath on the beach after her departing lover, Aeneas, knew not the bitterness of Posi.

"Calm down, big boy," repeated Nega.

"This is the limit!" screamed the agitated proton. "Think of it. A junk shop! I, Posi, who have lived in a thorium atom on the moon, where there is no oxygen gas and where I kept delightfully intoxicated with the sun's powerful ultra-violet rays. I, who have lived even on the other side of the moon. No earthly human eye has ever beheld that sight! I, who lived for ten thousand years in an oxygen atom that made

up a molecule of water vapor on the planet Venus. Steaming, moist Venus, blanketed with a vast and mighty jumble of clouds." Posi stopped to regain the usual rhythm of his excited vibrations and went on in a retrospective tone.

"SAY, Nega, what a time I had on Venus! Humans call it the planet of heavenly and spiritual love. If they but knew of the terrible winged insects, large as human airplanes, darting through the murky, constantly raining atmosphere, that is practically all carbon dioxide. These foolish Tellurians, with their weak, soft bodies, could not exist for a moment on Venus." Posi's anger suddenly increased.

"Alas! I am reduced to this, I, who once lived in a sulphur atom on the blazing Mercury, where lead, such as we are now, would be a fiery liquid. I wish these human scientists could be on Mercury with its temperature of seven hundred and fifty degrees Fahrenheit! They wouldn't experiment on us anymore. Or, just as good, I wish they were on Uranus, where it's so cold the oceans are liquid air. I lived on that sphere in a nucleus of arsenic."

"Wait," hissed Nega. "You're having an emotional spree."

"To think of it!" snarled Posi. "I, who have lived in the 'cold places' of space as a single proton. I, who know the secret of the 'cosmic rays.' I who—"

"Say, big boy, what are cosmic rays?" interrupted Nega, anxious to distract Posi from his wrath and appealing to the colossal conceit of the fiery proton. She drew the keenest weapon of her sex. "You know so much about everything."

"You're not so dumb," purred Posi, suddenly mollified. "After all, you're the sweetest negative electron I've ever known, and I've lived for millions of years. But I'm young yet—don't forget that!"

"I know," sibilated Nega, "but what are cosmic rays?"

POSI then told Nega of the cosmic rays; that those rays are not all alike; that they are divided into several distinct bands, or groups of the spectrum.

Nega, feminine-like, simulated great admiration as Posi went on proudly and academically.

"You see, my beautiful Nega, cosmic rays are different in their wave lengths and radiations. Some rays are more penetrating and powerful than others. Each cosmic ray is a type or a band by itself. Each spectrum band corresponds to the production of a particular kind of atom."

"You mean us?" purred Nega, affecting great ignorance, that her lover might appear important, even as women have always done.

"Yes, radiant one," hummed Posi across the great distance that separated them. "We were in the beginning a part of a nucleus of helium gas; born when a group of helium cosmic ray bands were released. Back of the atoms of helium are the atoms of hydrogen. The hydrogen atoms are the building bricks of the physical universe. They are the lightest of any atoms, and the simplest in construction. Do you know, Nega, that hydrogen is the primary and simplest form that matter assumes? I'm glad we are not in a hydrogen nucleus. We wouldn't have any company or friends."

"I wouldn't care if you were there," vibrated Nega, swinging coquettishly the slightest bit from her circling path.

"Do you remember, Nega, how close we came to the sun, when we were out in space? If we had been drawn into the blazing furnace of the sun, we no doubt would have perished. That space rocket came along just in time to save us!"

"Why were we being drawn into the sun?" asked Nega.

Posi glowed importantly and increased the speed of his rotation and began with low, musical vibrations.

"The sun must be kept burning brightly to warm its solar system. Countless billions of us important electrons contained in the atoms of helium, hydrogen, oxygen, silicon and other elements, constantly stream into the blazing furnace of the sun. There the nucleus, or positive charge of our atoms, is exploded, and the entire mass is transformed into a wave or pulse of energy. This released energy adds to the heat and light of the sun and prevents its furnace from turning cold cold and chilling its entire solar system."

"How hot is the sun? Would it have burnt us?" buzzed Nega.

"Hot," laughed Posi, "I'll say it's hot. Why, its temperature at the surface is six thousand degrees centigrade, or over ten thousand degrees Fahrenheit. But in the center, the temperature rises to forty million degrees centigrade, or seventy-two million degrees Fahrenheit. The sun burns off or loses a material quantity of about four million tons every second. Don't you see, Nega, that this mighty drain would in time deplete even that immense orb? So that's where we electrons come in to do our part. We usually become fuel to feed the furnace of the sun."

Posi stopped for a moment, then he continued in a portentous tone.

"So, my lovely Nega, the wheel keeps turning around, atoms annihilated to keep the sun blazing, and then new electrons being born. A mighty cycle of life and purpose."

"WERE we born in the sun?" asked Nega, now eager for knowledge.

"Great Cosmos!" laughed Posi, "how ignorant you are. We electrons are born far from the sun, but are created from its radiant heat that is being continuously condensed into positive and negative electrons, throughout the heavens. Then the electrons wander about in space till they unite in various numerical combinations to form different elements. But mind you, Nega, the atom building occurs in extremely cold places of space. I do not know what mighty force brings two or more positive electrons together. That part is incomprehensible. The process of crystal building is facilitated by low temperatures and not by high. Atom building cannot take place in the hot suns or stars. It can only occur in extremely cold interstellar places."

"Here's a message from Potor!" impulsed Posi so suddenly that Nega was startled. "This is an outrage! We're on the way to the junk shop. We're going to be melted into lead pigs—and to be sold some place."

"Will it hurt us to be melted?" whistled Nega in excitement.

But Posi was silent—covered with a fog-like shroud of angry purple.

Time flowed on in its steady wave of dimensional energy—time, the mighty metronome controlling the intricate and orderly, whirling dance of the planetary systems of the universe.

This futile pen poises uncertainly; reverently amazed at the vastness—the Mighty Plan of things!

For many months Posi maintained his outraged silence. For once the irrepressible proton seemed stricken dumb by the turn of fate.

The beautiful philosophy of the ancient Greeks conceived that the fate of humans was controlled by three mythological goddesses, Clotho, Lachesis, and Atropos. Clotho spun the thread of human life. Lachesis determined the length of the thread. The sad Atropos cut with her shears the thread of life, when death came to that human being. But there were various views of their functions.

What incomprehensible law—what im-

mutable edict—determines the fate of electrons?

No man can tolerate atheistic thoughts before the wonders that surround him!

Nega, younger and more vivacious by reason of her sex, enjoyed the whirling dance of life and kept up a continual conversation with the other electrons in the nucleus of lead.

Finally Nega, who loved Posi, sent out her sweetest and most feminine vibrations.

"Say, big boy, snap out of it. We're just as happy as we ever were, even if we are in a junk yard. I don't see why you feel so bad about that circumstance."

Grateful for the opportunity to break his long silence, Posi snarled a reply.

"I guess you're right, my sweet Nega. What difference does it make? Anyway I've been listening in on a new line of communication that has been established, and we're not in the junk yard now. We've been sold to a company organized by humans that make ammunition. Very shortly we're going to be poured into a furnace and melted."

"Will that hurt us?" buzzed Nega anxiously.

"NOT a bit," assured Posi. "The highest temperatures that humans can produce in their weak little furnaces will not hurt us in the slightest. Why, you'll enjoy it. Our mass of lead will become a liquid at six hundred and twenty-six degrees Fahrenheit. The only effect you will feel will be that of exhilaration. The speed of the orbits of all electrons will be greatly increased. Really, it's quite a pleasant experience."

"I'm glad you say that," purred Nega. "Somehow I dread it."

"Best not to, for we're in the furnace right now!"

"Why!" whistled Nega, "I feel warm, —a prickly sensation. My speed is increasing. Look! All the electrons are turning to a deep, red color."

"Sure," laughed Posi. "Our lead mass is a liquid right now. The tingling sensation you feel is the increased energy that is flowing through our current of electricity. Here is a nice little rule for you to remember, my sweet one. 'Motion and heat are forms of energy.' Why, I've experienced temperatures thousands of times greater than this. When I was a young man,—er—I mean—when I was on the planet Mercury, believe me, it was hot there. I—"

"You've told me about Mercury many times," interrupted Nega. "Tell me what's going to happen now."

Posi waited for a considerable time to listen in on the line of communication he had established with countless billions and billions of protons and then began in his best academic language.

"These earthlings, my dear Nega, are strange beings. They are vested with a high form of intelligence, self-motivation, and the most marvelous hands,—wonder hands to make things. These foolish Tellurians do not realize that their supremacy of their planet is due as much to their prehensile hands as to their arrogant intelligence. Just now we've been poured into tiny moulds to make what humans call thirty-eight calibre bullets."

"What are bullets?" again interrupted the eager and impatient Nega.

"CAN'T you wait, my dumb but beautiful one? I'm trying to tell you. These humans, with all their boasted civilization and ideals, make these bullets to kill each other. Just now we're going through an automatic machine that is pushing us into a brass shell. Against us is a charge of gunpowder. Some day, perhaps, we will be pressed into a steel tube called a gun, which explodes the gunpowder by an impulse from the hand of a human. The powder burns, creat-

ing a gas that expands at a high rate of speed, that will force the lead bullet, of which we are a part, through the tube at a velocity sufficient to tear the soft body of another human. If the wound is sufficient, the human experiences what they call 'Death.' "

"But why do they want to kill each other? Electrons never do that."

"My dear Nega, it was only a few hundred thousand years ago that humans were protoplasms and single-celled, jelly-like forms of life. They were struggling about in dismal thermal swamps. Earth was then hot, humid—steaming. The cosmic rays activated the low form of life and after many eons they experienced the law of evolution. They became aquatic things that crawled, with legs—fish that swam. Gradually these primitive humans took to the land and the forests, developing feet for locomotion, and their marvelous hands—fingered. I once lived on the planet earth when humans were ape-like creatures with but the faintest glimmering light of intelligence. I remember one time, about a hundred thousand years before the second glacial period, I had the good fortune to live in a nitrogen atom in the eye of a saber-tooth tiger. One day we captured and feasted upon one of those primitive humans. But that's a long story, and I'll tell you about it some other time."

Posi stopped for a brief mental rest and continued.

"That faintly glimmering light of intelligence developed, and from apes, man developed to these humans. But, my dear Nega, they have millions of years ahead of them in evolution, and some day they will not construct weapons to destroy each other. Wait a minute! Here's some new information coming through. Well, of all the tough luck! Do you know, Nega, we've been boxed up with forty-eight other lead bullets, and we're lying on a hardware-store shelf in a little hick town. Why, we may be here for years before someone buys us and explodes our cartridge."

Posi showed signs of throwing another fit of violent anger; so for several years Nega entertained him with feminine skill and instinct. She could not keep the flirtatious proton, however, from promoting amorous affairs with other negative electrons in their atom of lead.

"SAY, Posi," buzzed Nega angrily, "will you stop flirting with that Trona? She is old and fat, anyway."

"Every time I talk to another negative electron you accuse me of flirting!" shrilled Posi. "I'm getting tired of it. Wait! Hold everything! Here's some good news. I've just established a new line of communication. Our box of cartridges has been purchased by a doctor. Oh, don't ask me what a doctor is! I know you're going to. A doctor is a human who has developed slightly more knowledge of science than the bulk of the other humans. As I've told you before, their soft bodies deteriorate quickly and are subject to many ills and hurts. These doctors are skilled in the repair of damaged tissue. I've established communication with an old and wise proton, who lives in a bismuth atom, in the brain of a doctor. This is perfect! Do you know, Nega, we will know exactly what this doctor is going to do, for when he thinks, Positel, the wise and aged proton in the doctor's *cerebral cortex*—right among the pyramidal neurones—will tell us instantly. Billions of protons have tuned in on his vibrations. Positel is a talkative old cuss, just like you female electrons; so we'll have lots of news from now on."

"I can't understand," puzzled Nega, "how you communicate with Positel."

"Seems like I've told you many times before. You never seem to learn anything. No wonder your sex is called 'negative!' "

Posi pretended to be very angry, but he was really pleased to give out from his fund of information. It flattered his vast pride. He went on proudly.

"Well, there are many millions of us positive protons in this lead bullet. Flowing through us from negative to positive is the all important electric energy. This energy passes from one atom to another, —passes out of our lead atom into the copper shell that encases us, through the copper atoms and then through the oxygen and other gas atoms of the atmosphere. Then through the various atoms that compose the doctor's tissue and nerve fibres, until the impulses reach his brain, where lives the learned Positel."

"I understand," lied Nega shrewdly. "You're a very smart proton."

"Here's some rare news," rasped Posi suddenly. "Positel just sent out a message saying that the doctor is going to murder one of his rich patients. We've been placed in a revolver, and by rare good fortune our cartridge will come first under the hammer of that deadly weapon. This is going to be an exciting adventure!"

"For Cosmos' sake," whistled Nega, "why does the doctor want to kill the other human?"

"POSITEL says that the doctor is a criminal and has stolen all his rich patient's money and now has to kill the old man for fear he will be discovered and punished. Say, this is not so good! If our lead bullet is fired into the old man's body and he dies, and is buried, after the barbaric custom of the humans, we stand a good chance of being buried under the ground again. We're having the worst luck!"

"Will it hurt us when the revolver is fired?"

"No," snapped Posi, after brooding over the possibility of a long and dull interment. "You won't even feel it. You know there are vast distances between us. When the impulse comes from the expanding gas of the gunpowder, these millions of open spaces will absorb the shock. Our initial impetus from the discharge will be nothing compared to what we've experienced in past adventures. Wait! Positel says to listen carefully. It's becoming exciting. The doctor has the gun in his hand. He is pointing it at his unfortunate patient. There we go! Just a minute till I reestablish my line of communication. Cosmos! That doctor is certainly a crook and a murderer. Well, here we are, Nega. We just passed through the heart of the old man who had the money. We are lodged in his body near his spinal column, and what do you think that crooked doctor has done? He has taken another revolver that belonged to the patient, discharged a bullet through an open window, has wiped the gun carefully to destroy his own fingerprints and placed the gun in his victim's hand. It will look like suicide or self-destruction to other humans, who would punish the doctor if they knew the truth."

"But what about the poor old man, whose body we are in?" sibilated Nega with feminine pity.

"Oh, he is quite dead. His spirit has flown."

"Where has it gone?"

"I can't answer that," replied Posi in a reflective mood. "I have met many great and wise protons, and no one could ever tell me where one's soul goes after death."

"In adamantine chains shall death be bound." (Pope.)

"Do electrons ever experience death?" Nega's question came in anxious but harmonic oscillations.

"We are born in the 'cold places' of space." Posi decreased his natural repellent force to Nega as he answered the mighty question. "Electrons die—or dis-

integrate when they are drawn into the blazing furnaces of any of the billions of suns—to become waves or pulses of energy. No other means can destroy except these 'Alpha Rays' of the human scientists, and that requires three billion volts of potential energy. Even in these devilish devices, it is an extremely rare case when an electron is hit and destroyed, although any atom, or nucleus is often struck and exploded by the rays. An atom, of course, offers a larger target than do we electrons. And you, my delicious Nega, offer an infinitely smaller target. I am eighteen hundred and forty times heavier than your own sweet self. I do not understand death."

"Death, so-called, can the form alone deface,
The mortal soul flies out in open space,
To seek her fortune in some other place."
(Ovid)

"WHAT'S happening now?" begged Nega anxiously, because for a period Posi had been busily engaged conversing with other protons.

"Say, Nega," whistled Posi in excited vibrations, "we're really having an exciting time. The strangest bit of luck has befallen us! Positel says the murderous doctor became frightened, realizing that the bullet from his own gun might betray him, and has performed an operation and removed our lead bullet. He has hidden us in his pocket. Just now human police are swarming in the room, and a very shrewd detective is extremely suspicious. The clever doctor is telling them that his patient telephoned him he was committing suicide. The doctor says when he arrived the old man had already fired a bullet into his body by his own hand. The doctor is telling the police he performed an emergency operation to save the old man's life, but that it failed. The police believe the story. Every human does except the suspicious detective, who is demanding the bullet, but the doctor is telling him that he could not find it. The dirty scoundrel! I believe he is going to get away with it!"

"That's a shame!" hissed Nega. "If the detective only knew we are in the doctor's pocket."

"WELL, anyhow the doctor is now back in his own laboratory," from Posi in tense, strong vibrations. "Seems he is a scientist, gone insane over the idea of transmuting lead into gold. What do you think of that, my dear Nega? We've plenty of exciting adventures ahead of us. This doctor has some fine apparatus, such as Millikan used. This crazy doctor is going to place us in his machine and shoot our lead bullet with alpha rays. Positel says he has been experimenting for years. Lead, as I have told you, my sweet Nega, is the eighty-second element. Gold is the seventy-ninth. Mercury comes eighty in atomic number and thallium eighty-one in atomic number. This fool doctor is going to bombard our atoms with a cathode-ray stream. He hopes to shoot enough electrons and protons out of our outer lead atoms to give our mass the same numerical composition, atomic number and atomic weight as gold. Even if he succeeds, the power consumption will make his precious gold the most expensive metal ever produced. The idiot would have better luck if he tried mercury. Do you know, Nega, that in the last five hundred thousand years at least a dozen ancient alchemists have tried that on me. It never seems to occur to these bungling human experimenters that if they took platinum, number seventy-eight in atomic number and one hundred and ninety-five and two-tenths in atomic weight, they might have better success. They would only have to add one point in atomic number and two points in atomic weight. In other words, if they could take one

good, handsome, healthy proton like myself and place me in an atom of platinum, their chances would be far better." Posi glowed an important red and went on in portentous tones. "But the 'Vast Intelligence' has made transmutation difficult, for first of all platinum is scarcer and more valuable than gold; so these grasping humans would not benefit themselves in a monetary sense by changing platinum to gold. Besides, it requires a tremendous energy to disrupt electrons. Well, here we go into the experimental machine, and this is really a fearful risk! There's a chance, my dear Nega, that we may become separated forever. Here's something interesting."

"What is it?" interrupted Nega, swinging in her orbit a bit closer that she might better catch the vibrations of the positive electron or proton.

"Ha, ha," laughed Posi. "This is rich! You remember that suspicious detective I told you about? Positel tells me the detective disguised himself and has secured a position as the doctor's assistant in this laboratory. And what do you think? Positel dislikes this doctor, says he is a drug addict and takes powerful drugs that have enervated the cells of his brain. Some of these drugs have been in such powerful doses that even Positel has experienced discomfort from their effect. He is anxious to bring this crooked doctor to justice, and he has worked out a scheme to help the detective. Every positive proton within the range of Positel's influence is concentrating in a mighty, concerted effort."

"I cannot understand," begged Nega.

"It's this way," explained Posi. "The doctor has taken a sedative drug and has gone to sleep. The detective it waiting, concealed in the room, to hear what the doctor talks about in his sleep, and that's where we positive protons can help. At a given signal from Positel, we many quintillions of positive electrons are going to concentrate with all our strongest vibrations to send influencing waves into the brain cells of this doctor, who will experience what humans call dreams or subconscious memories of the past. We can disturb with our mighty, united vibrations the normal function of his brain cells. We are trying to make him talk in his sleep and tell the truth. Now, Nega, be still. Here comes the signal from Positel. Here we go."

It was with great difficulty that Nega remained quiet for a considerable time while she kept an anxious eye on Posi, whose spinning movement had slowed and his color faded to a deep, ominous blue. It was evident that Posi was striving with all his power to add to the vast chain of influence. Finally Posi's color turned to his normal, brilliant purple.

"WE did it!" he fairly whistled to the astonished Nega. "We caused the wretched doctor to talk in his sleep, and he reenacted the actual killing. The detective has taken him to the police. The doctor in his great fear and confusion confessed. Well, there's one murderer brought to justice and one time we electrons helped humans to catch a murderer. The worst part of it is we will never get credit for it. Those humans are so stupid!"

"But what's to become of us now?" asked Nega.

"That's the bad part of it," shrilled Posi in excitement. "The detective put handcuffs on the doctor; in the struggle he accidentally turned the switch of the doctor's Alpha Ray machine. The tubes are heating up swiftly! In a moment we will be subjected to the terrific bombardment of the horrible Alpha Rays! And that's not all! The crazy doctor has a great bomb planted in this room. Before the detective handcuffed him, the doctor pressed a button to operate the bomb. Positel says the deadly mechanism

will explode in one minute! I guess it's good bye, Nega."

"Then hold me tight," screamed Nega.

All forms of life, from the lowest to the highest, have an inherent fear of death and possess an all pervading instinct to live. The lowly and sluggish worm will struggle for its life. Plants overcome seemingly insurmountable conditions of weather to flower in desert wastes. The spider—the fly—the lion—and man,—all strive with every nerve, muscle and fibre to exist, no matter how great the odds. The mighty desire to live and propagate permeates and actuates all forms of life.

Posi and Nega were the highest form of energized, whirling, spinning, vibrating life. True, an electron is amazingly hard to destroy or disintegrate, owing to its smallness.

Posi and Nega had shared many stirring adventures—braved many perils.

"Try and keep your energy current neutral," hissed Posi. "When the test comes, I'll attract you with all my might. I do not think we'll be destroyed unless one of the alpha ray particles, traveling at fearful velocity, strikes either you or me squarely. We might be saved even though our atom be disintegrated. Remember, my dear Nega, there are worlds of open spaces in our lead atom for the alpha ray particles to shoot through. If only that crazy doctor's bomb will explode before this machine gets warmed up, for if the alpha ray particles continue to dart through this contrivance long enough, we are certain to be struck squarely."

"Let's be brave," pleaded Nega. "We've shared deadly perils before this."

"Hold fast, Nega!" screamed Posi. "The alpha rays are coming!"

POSI instantly turned to a deep red color, as he changed his usual repellent force towards Nega to his strongest attraction. Nega, with her feminine, Spartan-like courage, obeyed the instructions of Posi and waited patiently. She realized that Posi had lost his line of communication with Positel, who was on his way to punishment with the murderous doctor.

Flame colored, lightning-like streaks flashed with the alpha rays through the deadly alpha ray mechanism. As they speeded, the tiny particles small beyond human comprehension, given impetus and energized by three million volts of electricity, streaked through the lead bullet as though the substance did not exist. At least most of the ray particles flashed through the open spaces in the lead. Millions of particles struck squarely against positive electrons. A lesser number of negative electrons were hit because of their extreme smallness; the positive electrons, being 1840 times heavier than the negative ones, offered a better target.

A crashing debacle of worlds—universes—occurred!

The smashing, ripping energy, firing, projectile-like, billions of speeding alpha rays, began to fairly riddle the atoms of lead. Countless positive electrons squarely struck were instantly disintegrated. Others, struck glancing blows, were instantly projected from their whirling positions and orbits, to become in turn hurtling missles; to dash and collide with other electrons.

"Are you all right, Posi?' shrilled Nega.

"Yes, my dear," vibrated Posi, "but some of these rays will certainly strike me. If only the bomb would explode. It would wreck this machine and might save us—"

Wham! came a mighty fulmination of expanding gas! The bomb had exploded!

Posi and Nega felt themselves torn from their atom just as a concentrated

group of alpha rays sizzled through the heart of their nucleus. A vast confusion followed, a rifting, whirling, expanding convulsion, from the gigantic air-hammer of the explosion!

Posi exulted. His shrewd little consciousness realized that the alpha ray machine, together with the building, had been demolished and that they were being flung by the force of the expanding gas far from the place in space they had occupied.

"Nega!" whistled Posi. "Oh, there you are! I held you to me during all that upheaval. Why, we're in a strange atom! Well, this is great luck."

Already the busy little proton was communicating with seven other positive protons that made up an atom. Nega, with true feminine characteristics, had fainted; or shall I record that she lost consciousness?

"Snap out of it, Nega," hissed Posi. "Watch your flight. You're oscillating. Say, you do look pretty in your new orbit. It fits you like the Rings of Saturn."

"Where are we? What has happened?" impulsed Nega in weak vibrations, but near to normalcy.

"Well, Nega, my sweet, we have had a great piece of luck. You know I believe you're my lucky star. Since I've met you, I have certainly had some interesting adventures. You see, it's this way. Just as the alpha rays disintegrated our nucleus of lead, the doctor's bomb exploded, and we were flung high into the atmosphere. Being a healthy, young proton, I was able to attract you with sufficient power to hold you to me. And think of it! We have become part of an oxygen atom. There are eight of us positive protons in the nucleus, and there's a fine chap here by the name of Gata, that I met a million years ago on the planet Venus; and there are eight of you negative electrons to balance our atom, but none so beautiful as you, my sweet Nega."

"What will happen to us now?" begged Nega, whose orbit had become normal as she began to orient herself with her new companions.

"Oh, we'll drift around in the atmosphere. Anything might happen to us now," sibilated Posi, happily. "In all probability we'll be condensed into water vapor, or we might be breathed by some earthly human. That would be great luck. We're very close to the surface of the earth and are subject to wind currents and atmospheric conditions that direct our travel. Of course billions of oxygen electrons constantly escape through the stratoscope of the earth, to drift in space for millions of years. That's happened to me before on different planets, and that's not so good. But don't worry. Our chances to escape into space are very small, for the strong gravity of earth is very favorable for us to remain."

"I'm tired," sighed Nega. "I think I'll take a few months sleep. Will you watch my orbit, my dear?"

"Sure, old girl." Posi's masculine eye had noted that all of the other seven negative electrons were young, trim and round, and he wanted also to cultivate his new feminine, negative friends.

Nega slept.—

"The timely dew of sleep." (Milton.)

A FEW weeks later Nega was rudely awakened from her sleep.

"Wake up, Nega!" screamed Posi in harsh and excited vibrations. "There's Hades to pay. Our cursed bad luck has caught up with us again."

"What's the trouble?" asked Nega, as she began to speed her orbit.

"Of all the infernal luck!" snarled Posi. "We've drifted into a hospital window and—"

"What is a hospital?" As usual, Nega was eager for information.

Posi controlled his rage sufficiently to make a terse exclamation.

"Humans, my dear Nega, have hospitals where they go when they are sick. There their broken and diseased tissues are healed by other skilled humans. That junk yard business was bad enough, but this is absolutely the limit. We've been breathed into the lungs of one of these humans, who is ill, and in a few seconds will be in that human's blood stream."

"What difference does it make?" interrogated Nega. "I don't feel any different. Can't we be just as happy?"

"I suppose so," grated Posi, loosing the reins of his anger, "but this human has typhoid fever. Don't you see, if this human dies we will again be faced with the possibility of being buried under the ground. It's difficult for me to communicate with any of the protons in this sick human's brain; but I have a line with an old proton named Ecto, who says our human is expected to die any moment. This is a case where your ignorance is certainly bliss, but don't you see it's a disgrace and an outrage for us to exist in the diseased body of a human? Why, I tell you—"

"What is happening to us now?" interrupted Nega, to whom the current happenings were nothing more than another interesting adventure.

"We have been carried by the blood stream of the patient into his alimentary system. This last insult is more than I will stand. Imagine!—the stomach of a dying earthling!"

"Cheer up! Don't be down-hearted," purred Nega. "Perhaps we'll get out of this all right."

"There's no use," snarled Posi. "I can't make you understand the disgrace. Wait! Here comes a message that is news."

Posi's color turned to an angry red vibration, and his tones fairly screamed. "Perhaps this will startle your dumb, feminine intelligence," snapped the angry proton. "We've been eaten by a *Bacillus Typhosus!*"

"Cosmos!" whirred Nega. "What is that?"

"Of course you don't know, my beautiful but dumb one. A *Bacillus Typhosus* is an incredibly small germ that causes typhoid fever in humans, and if you care for any more scientific information," went on the infuriated Posi, "let me tell you that this dreadful little germ is very large compared to us. Millions of times as large, but so small to these stupid humans that they can barely see it, except with their most powerful microscopes." Posi's anger calmed a bit as he gave out his knowledge.

"The typhoid germ is oval-shaped and each germ has six to ten hair-like legs. This sick human's alimentary system is infested with millions of these germs. That's the reason the poor fool has typhoid fever—that's the reason the human is going to die, and the reason we probably will be buried along with the body!"

"How did the germs get into the human's system?" asked Nega, ever eager for information.

"Humans usually drink these germs with polluted water. This is a nice state of affairs. You and I part of a nasty, cursed Bacillus Typhosus, circulating around in the alimentary system of a dying human infected with typhoid fever. Of all the devilish luck!"

Nega tried to convince Posi that their fate was not hopeless, but the infuriated positive proton resorted to an ugly silence. Nega was forced to talk to other electrons for information and relaxation.

A few days later, as tellurians calculate time, Nega was greatly worried when suddenly Posi began to increase the speed of his rotation until he threatened to disturb the structure of their oxygen atom.

Nega knew that some exciting news had again upset and enraged the excitable proton. Mumbling vibrations and protests arose from the other electrons, who shrieked at Posi to stop disturbing the cadence of the atom's intricate movements. Finally with shrill vibrations that hurt Nega's sensitive reception cells, Posi fairly screamed.

"There's one way these cursed humans have the advantage of us. They can commit suicide if bad luck befalls them, and we electrons cannot."

"Snap out of it," begged Nega, for once a bit angry at Posi's excitation.

The older and wiser voice of Ecto, the proton, burst in on Nega's hearing.

"Posi, my dear boy, don't be so upset. This has happened to me once before. We stand a good chance to get back again and have exciting adventures. When we get out into the ocean, in time the sun's rays will absorb us, draw us into the air, and we will become water vapor and eventually fall on earth as rain. It may take a few thousand years, but what's the difference? Cheer up, old sport, and don't take this so hard."

At the portentious words a great uneasiness swept over Nega.

"My dear Posi," she begged, "please hold yourself together and tell me what the trouble is."

"Trouble enough," snarled Posi. "We're in a long pipe these fool humans call a sewer, and going to the ocean.

Life flowed on and on; likewise Posi seaward—

"Winged with red lightning and tempestuous rage." (Paradise Lost.)

THE END

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. Is the diameter of the earth the same everywhere? (See page 6.)
2. What approximate difference in miles is there between its diameters? (See page 6.)
3. Give some illustrations of phenomena of the earth's centrifugal force? (See page 6.)
4. Where only could a shaft be imagined to pass through the earth in which a weight would fall without striking the side? (See page 7.)
5. What velocity, approximately, does the earth develop on its equator? (See page 7.)
6. How would the projectiles fired at the city of Paris be affected by the rotation of the earth? (See page 8.)
7. If the earth ceased rotating about its axis, what would the water of the ocean do. (See page 8.)
8. What rivers flow up-hill? (See page 8.)
9. What is the composition of the nucleus of helium? (See page 69.)
10. How do you discover from the table of atomic weights the composition of an atom of any given element? (See page 72.)
11. How might the absolute zero affect matter? (See page 73.)
12. What is the approximate relation in size of an atom and of a star to a human being, and of the earth to the sun and to the star Antares? (See page 75.)
14. What are the "building bricks" of the physical universe? (See page 76.)
15. Give some temperatures of the sun. (See page 77.)
16. What are the atomic numbers of mercury and of gold? (See page 101.)
17. What are their chemical symbols? (See page 101.)
18. What is the relation of the protons and electrons in an atom? (See page 101.)
19. What are the characteristics of Tibet? (See page 118.)
20. How may it be described? (See page 119.)

The Lost Language

By DAVID H. KELLER, M.D.

This is a pathetic story especially interesting from various viewpoints. An unknown tongue and an unknown script enter into it and Dr. Keller appears at his best in his kindly human nature and depiction of the best that is in us. It will remind our readers of the rare instances of what the Spaniards might call a life "Incomunicado," applied to a prisoner who is not allowed to see or communicate with anyone. An interesting feature of the story is that it is written by a man who is an expert in psychological phases of this strange human existence of ours.

Illustrated by MOREY

DAVID PHILLIPS, 3rd, was a beautiful child.

He was a baby any parents would be proud of.

His father, David Phillips, Jr., and his Grandfather, David Phillips were proud of him; also his mother and all his sisters. They bragged about his sturdy body and his bright eyes and his crop of black hair. They talked about the fortune of the family in finally having a male heir after three daughters. But when the boy reached the age of two they talked less and when he was four years old they ceased to talk.

There was nothing wrong with the boy's body.

But he would not talk.

That is the way they put it. He would not talk.

Even when he was four they would not admit that he could not,—because all of his relatives, even some of the physicians they consulted, were sure that he could talk *if he wanted to.*

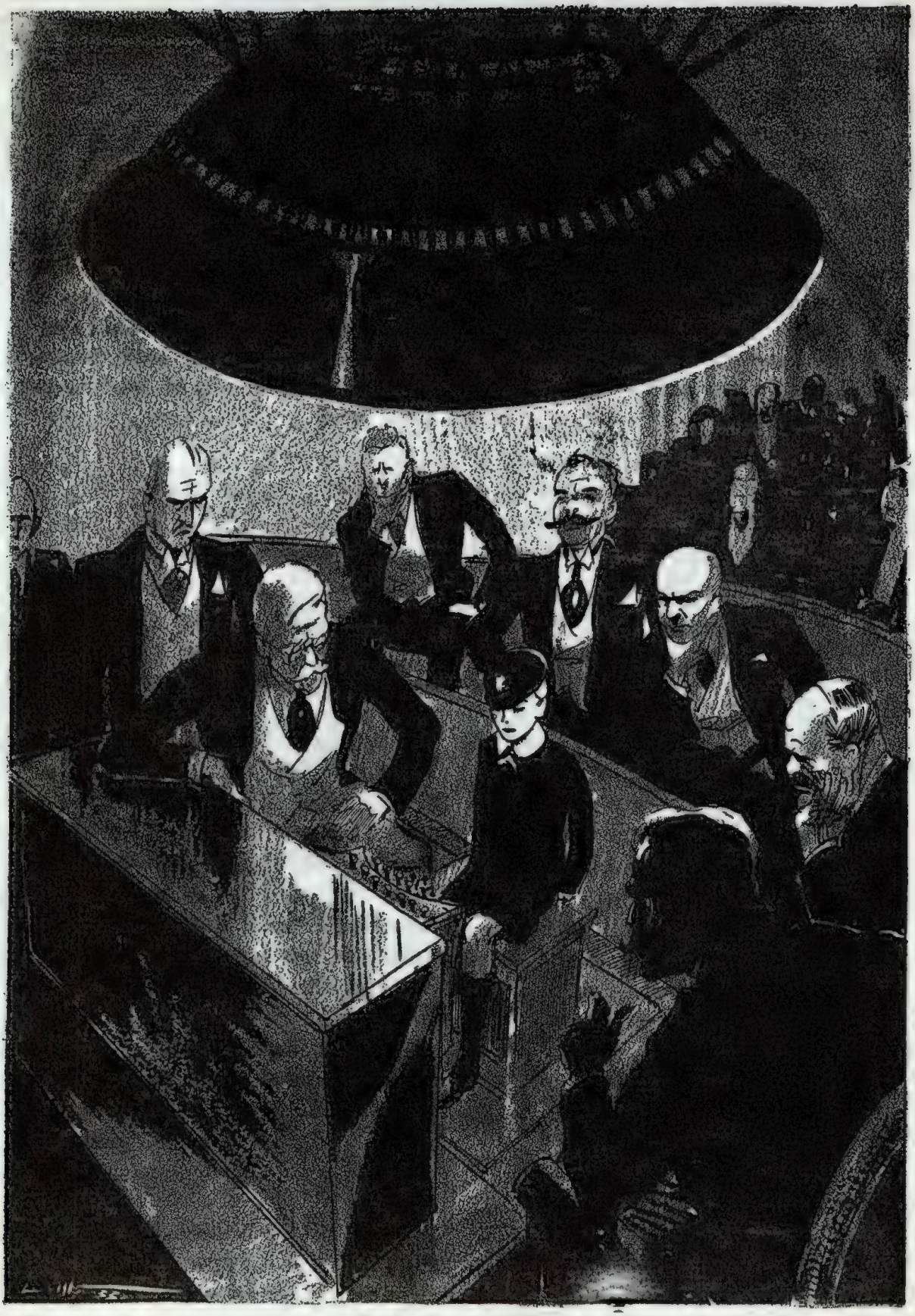
He did not even vocalize.

As a baby he had cried. As he grew older, he outgrew the infantile noises of displeasure. It almost seemed as though he was training himself to accept the vicissitudes of life from the standpoint of a—stoic, perhaps even of a philosopher.

There did not seem to be much mental deficiency. He learned to take care of himself, to adjust himself to his environment, to dress, feed, and amuse himself. He was really a bright, adorable, loving child. Accepting life as he found it, he lived in the home and with his family without in any way being a burden. At five years he was a little man, but he did not talk.

By this time the child's family was decidedly interested in the problem. Being a wealthy family it was able to secure the services of specialists in speech-training, who also became personally interested.

But just being interested did not help. Even when he became a national problem, even when learned men devoted some days of their vacations to a visit to the Phillips home, even when psycholo-



A day later sixty men from every part of the world assembled in a room with perfect acoustics.

gists and brain experts offered their services and advice *gratis,* there was no improvement.

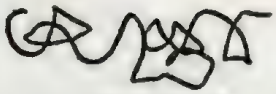
Every effort was made to arouse his interest in language as a medium of communicating thought. He was studied, bribed, and even punished in the endeavor to make him utter a sound. He simply accepted any treatment with a certain degree of patience and kept on living his silent life.

He played with the playthings of children of his age. He worked, ate, slept, loved, had pets, took trips with the family, grew into sturdy seven year boyhood, in every way a nice, adaptable, lovable youngster, the pride of his family and their despair.

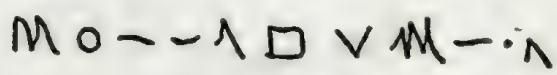
He was a silent boy.

At that he was never out of communication with the world. He learned what was expected of him, but he learned by imitation. Not that he was deaf; in fact, all the tests showed him to be peculiarly sensitive to sounds. When a snail crawled out of the aquarium at night and dropped to the carpeted floor he heard it fall and went to its rescue. He liked to hear the birds sing, the radio play, the family talk; there was no doubt he could hear noises unheard by the older members of the family, but words, just plain words, the sound of letters conjoined, left him cold and uninterested. Thus he grew up learning what people expected of him and making his wants known, but never through the medium of language.

FROM the age of two he had one outstanding habit, scribbling on paper with a pencil; later he used crayon, or pen and ink. At first it was just plain baby scrawls, the kind of marks any child would make, given white paper and a pencil; marks like this,

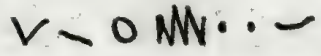


but later on he developed a rather systemitized series of marks which, while they varied from day to day, had a certain uniformity and a definite sequence, like this,



"That is writing!" a specialist exclaimed, who came a thousand miles to study the child. "That is writing and the child is trying to communicate with the world."

It was all well enough to say that it was writing; in fact everyone knew that it was writing. What else could it be called? But what kind of writing? And what did it mean? Even when they found out by the boy's actions that



meant he would like grapefruit for breakfast, how much better off was he, and his family and the world? The specialist continued:

"The child knows what he wants to express, and is expressing is in his own way. The marks he makes have no relation to any other known writing. An intensive study of these marks would ultimately bring him into communication with a selected few. He happens to belong to a wealthy family who could hire a few educated persons to learn some of the signs. If he was a child of a poor family he would end in a school for the feebleminded. The state would not, could not afford to bother with him."

"BUT he is not a case of mental deficiency," protested the mother.

"That is purely an academic question,"

argued the specialist. "For centuries the human race has communicated with each other, first by sounds, and later by writing. Writing is simply a mode of sound. I admit that people learn to read silently, but even then they transpose the typed symbols into sounds subconsciously and thus obtain the meaning of the printed line and page. The dot and dash of the Morse code simply replaces letters which, in proper combination, have definite sounds, and those sounds for centuries have had definite meaning. This boy forms his own symbols. There is no doubt they mean definite things to him. You have shown me that, and my experiments with him have convinced me that you are right. But his refusal to adopt the symbols of the herd, to learn the alphabet, to follow the lines of communication used by his ancestors and his associates, stamps him at once as abnormal."

"But not feebleminded!" cried the father. "I have visited the schools where imbeciles are cared for. I have talked with the physicians who care for them. I have placed my son in every possible relation with them, made every possible comparison. I am not a neuro-psychiatrist, don't pretend to be a psychologist, but if my son is mentally deficient then I am a white elephant."

The scientist smiled the smile of despair as he replied,

"Have it your own way. After all he is your son. You have a right to have a familial pride. I admit that he is a nice boy, but that is all he will be, all he ever will be, just a nice boy, just a healthy animal. He will grow to be a man and when he does, he will be just what he is to-day, only larger. The herd will not like him, they will shun him as they do everyone who does not conform to the pattern, who does not run in the common groove of life. He is an abnormal and he will stay an abnormal, unless he learns to adopt the means of communication used by the rest of the human race. A deaf-mute can be taught to write, he can even be taught to talk, but this boy is a psychic rebel. He refuses to learn."

"Perhaps he cannot learn. Is that refusing?" asked an interested sister, a college graduate, who had majored in psychology, speech and habit training, because she loved her little brother and wanted to be of service to him.

"You are right and I was wrong," admitted the psychologist, "but after all I .... wrong merely in the words used and not in the idea. The child is so bright in every other way that he creates the impression of wilful resistance. Let me explain. I was working with him yesterday. Take his symbol for an egg, you know what it is, but let me draw it as he does,

By that he means an egg. Now I write it the way we do in English,

EGG

I show it to him. I hand him an egg. I show him his symbol. In every way that I can I try to explain to him that his symbol and my symbol and the actual egg are all the same. Then I take away his symbol, and give him another piece of paper and show him that I want him to copy my symbol for an egg. He simply shakes his head and draws his symbol. Now I know any number of children three years old who would copy my symbol and understand that it meant an egg, but he refuses to do it. He thinks that I am wrong. That shows his rebel mind. He refuses to accept instruction. He thinks his symbol, for an egg, is right

and mine is wrong. You cannot teach a child like him. He wants us to learn his language, while refusing to learn ours. From a purely academic viewpoint it is possible to do so, but here is the difficulty. His language is not a sound language. It never can be spoken."

"Certainly it can!" exclaimed the sister. "He makes a sign for an egg. I understand the sign. I translate it into sound, and say the word *'EGG.'* What do you mean by saying that it cannot be spoken?"

The man shook his head.

"I INSIST that there can be no language without sound."

"How about the finger talk of the deaf mutes? asked the father.

"What is it? They form signs with their fingers and those signs are words or letters, and the letters make words and the words are the words everybody uses and knows the signs and sounds of. Even the Maya symbols are meaningless till we translate them into words, and then we have to speak the words. If your son would only learn the finger language of the deaf-mute, it would at once change the entire picture. What I am trying to say is that he refuses to accept the modes of communication used by any group of the human race. To that extent he has a rebel mind."

"I have been close to the lad," the father retorted. "I have been with him a lot recently. We have gone fishing together, and camping out and all that sort of thing. He may have a rebel mind, though it is my opinion that he is the way he is, because he cannot help it. But there is one thing I do believe. He is perfectly satisfied with his written language and it means something to him. He is very much pleased when the family uses it. Somehow it makes him feel we are interested in him and love him. His writing means a lot to him and he is proud of it. I think that at times he is sad because we are not intelligent enough to understand it."

"You find someone to translate it into sound and then I will accept it as a bona-fide language, and that is my last word," said the scientist, and with that he left.

The father, the following year, took David Phillips, 3rd, to London. There was a man there, Henry Jordon, who had gained international renown by his work with vibrations. He was the inventor of the vibrowriter, the new typewriter that could be talked to, and which transposed the spoken sound into typed words, a contrivance which made perfect spelling possible, provided the words were perfectly pronounced. The father had an idea and was willing to travel four thousand miles and spend any amount of money to find out whether he was right or wrong. His letters of introduction opened the door to the scientist's workshop; his story opened the door to the man's heart; the adorable healthy boy at once won the inventor's interest and love.

"I may be asking the impossible," explained David Phillips, Jr., "but the boy is my son, and perhaps the impossible can be made possible. You have a machine that can turn sound into a written language. Can you make a machine that can do the reverse? Can you make some kind of apparatus we could run this lad's writing through and change it into sound?"

"What kind of sound?"

"Any kind. Take this symbol for egg to start with."

"But you know what the sound is for that. It is E G, *EGG,* just *egg.* You do not need a machine to do that."

"Yes, but that is our sound, the English sound. His sound may be entirely different."

"How can it be. You have just told me that he never talks, never even vocalizes."

"That is true, but the experts in America tell me that there can be no language without a foundation of sound, so there must be some corresponding sounds to his symbols even if he does not make them. But here are his papers. You may not believe it, but on the way over from New York, he was writing all the time, having the best kind of a time, and I think he was writing a story. At least he was happy doing it. And here is something else. He wants a typewriter."

"Why not buy him one?"

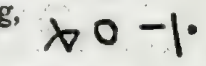
"I would but he does not want our kind. He keeps on showing me his writing, and then points to my portable machine."

"In other words you mean that he is telling you he wants a machine of his own, with his own symbols?"

"That must be it."

"I will make it for him." declared Henry Jordon. "You leave his papers here. I will have them analysed and broken up into units and have a typewriter made that he can write with, just as well as he can write with a pen or pencil. You take him to see the Tower of London and Trafalgar Square, and come back in three days and I will have a present for him."

On the third day father and son returned to the work-shop of Henry Jordon. The inventor took them into a room that had only a chair and a table but on the table was a typewriter, and in it was a sheet of white paper. Jordon touched five keys, took the paper out and showed it to the boy. He had written the symbols for egg,



David Phillips, 3rd, looked at it. Then at the machine, and then he took the paper and showed that he wanted it put back in the machine. Then he looked at the keyboard, and slowly, painfully slowly, he started to write his symbols for eggs. Then he started to cry, great tears of happiness, and he kissed his father, and went and hugged the inventor, and all the rest of that day he wrote on the machine while the two men watched him and compared the writing with his papers and experimented, handing him simple objects, and urging him to write their names on the machine.

That night, in the hotel, he would not go to sleep till the machine was securely placed on the bed where he could hold it while he slept.

"All you have to do now," said the Father, "is to take his typed manuscripts and translate them into sound."

"That is all," replied Jordon, "but that may not be as easy as you think. Come back in a week."

That night the father could not sleep. He sat most of the night by the boy's bed, looking at him, the pride and hope, the last hope of the family. The boy slept peacefully, but in his sleep he never lost contact with the typewriter. Early in the morning the father arrived at a decision. He sent a radigram to his daughter, the one who had majored in psychology, speech and habit training, because she loved her little brother. He said,

Anna Phillips;
57 Park Place;
New York City, N. Y.
Come to London on next boat.
We need you. Father.

Because of this there were three of the family who called on Henry Jordon at the expiration of a week. They found the inventor, tired and hollow eyed but happy.

"I have done it," he said simply, "and you do not owe me a cent. I can use the same principle with any type. In a month's time, tired people will be placing pages of a book in their machine and hear it read to them. Suppose we try it. Have the lad write something on his machine."

BY signs they explained to David Phillips, 3d, what they wanted. He wrote three lines double spaced. Then the inventor took the paper, placed it in another machine, and pressed a button. Sounds came from the machine, sounds that seemed to be speech, but that were unintelligible to the audience. But the boy was spellbound. He looked from his father to his sister and then to Jordon and by signs asked that it all be done over again. Jordon wrote his signs for the word egg and showed it to him. Then he put it in the second machine and pressed the button, a single sound was heard.

"And that," commented Jordon, "is the sound that means 'egg' to him. It is the sound that corresponds to his symbol. Suppose we learn to make that sound. I will get twenty different objects and place them on the table. Then his sister can make that sound and we will see what he does."

Again and again they had the machine sound the word for egg, till the sister learned to say it. Then a watch, keys, matches, money, pins and an egg were placed on the table. The sister took the lad over and made the sound, just once, pointing to the table. The lad listened and without hesitation picked up the egg and handed it to his sister.

"That tells the story," commented the father. "My boy can hear. We always knew that. He can hear but cannot talk, but he can write. What he writes can be transposed into sound and when that sound is reproduced he can understand it, and the rest is just training."

"It is a track," frowned Jordon, "on which the trains only run one way."

"At least it is a track," insisted the father. "Suppose you put a whole page of his type in and see how it sounds."

"It is gibberish to me," commented the inventor.

"That is because you are not a linguist," retorted the sister sharply. "Perhaps some one else could understand it."

"Let us put it to the test," said the inventor, smiling." At this very time there is a meeting in London of scientists from all over the world. Perhaps fifty different languages are represented. We will go there and have them listen to it. Someone there may recognize some of the sounds."

A day later sixty men from every part of the world assembled in a room with perfect acoustics. The problem was explained to them. A hundred questions were asked and answered, so they would have a clear understanding of the situation. Then an entire page of the lad's typing was run through the sound-transposing machine, purposely slowed so that the sounds could be differentiated.

And then silence, followed by a mixture of speech, but no one seemed to be sure. One by one the lingual experts rose and, saying that they could not understand it, left the room. At last only one man was left. He came up to the disappointed experimenters.

"I am not sure of what I am going to say, but it may help," he began, in a rather apologetic tone. "I am from Wales, and I know a few of the Welsh dialects but not all. I believe that these words are Welsh, but is is not any dialect I am familiar with. But there was a little corner of Wales where they had an

odd language years ago, something different from the other dialects. I went there five years ago to investigate it and there was just one old woman there, Granny Lanarch, they called her, who could talk it, but no one could understand her. She talked it for me, and as I remember it, it sounded a little like this language you have had us listen to. So the best I can say is that it may be an old Welsh dialect and Granny Lanarch can talk it. I will give you her address. She talks fairly good English in addition to her dialect, so you could have her listen to it and even make some phonographic records of her old speech."

"We will go there," said David Phillips.

"But it cannot be Welsh," commented the inventor. "You are from New York."

"MY family came from that town in 1765," announced the New Yorker, "so we certainly were Welsh at that time."

"And it may be a case of inherited memory," added the daughter. "At least the psychologists think that there may be such a thing."

They went to Wales and at last they came to the little town by the Irish Sea, where Granny Lanarch had lived. Had lived, for she had been dead these two years. They went into her little cottage, they sat on her old chairs, they looked out on the waves through windows she had looked out of, but Granny Lanarch was dead.

The inventor beat a restless tattoo on the table with his fingers, not knowing what to say or how to say it. The father sat unstrung and nerve-broken. The boy, interested in new sights, smiled happily. The sister, sat with white face and closed eyes. At last the father shook himself, as though waking from a dream.

"We have come to the end of the trail," he whispered. "My son knows something, but it is a lost language. He will have to live his life alone."

The sister opened her eyes, opened her arms and pulled her brother to her lap. She turned fiercely to her father.

"What do you mean?" she demanded. "What do you mean by saying that he will be alone? He can write what he thinks, and when I put it in the machine I can hear it and learn to understand it; and if I can understand it I can learn to talk it, and when I talk it, he can hear me and answer me on his typewriter. What do you mean by saying that he will be alone when he has me?"

"You cannot do that," whispered her father gently, almost with a caress in his tone. "You cannot do that, Anna. It would mean a life of sacrifice, a life of solitary devotion. You could not do anything else. Why should you sacrifice everything for him?"

She simply held her brother the tighter, as she replied:

"Because I love him."

THE END.

GOLD

By ISAAC NATHANSON

In the national finances of the United States the subject of gold has played a very prominent part, and has even led to very radical measures, far too radical in the opinion of some, to get all gold coins and bullion, so called, into the Treasury, and here we have a story about gold which seems to fit in very well with the government operations of today. Mr. Nathanson we consider one of the leading writers of science fiction, and we are always glad to get any of his work into our columns.

Illustrated by MOREY

LEWIS WALLING, experimental physicist and inventor, was eagerly demonstrating to his brother Bill, the strange-looking set of electrical machinery, the pride and fruit of his genius. Into its being had gone years of intense toil and research.

The complicated apparatus almost filled the large rectangular room, a converted private garage in the rear of the Walling homestead, which served as a workshop-laboratory. All about was a hodge-podge of apparatus and tools used by the chemist, the electrician and the experimental physicist; yet all arranged with some evident plan of order in the midst of disorder. A pungent odor smelling strongly of ozone permeated the place. From the strange-looking machinery came a high-pitched humming and crackling sound.

The two men were standing near the main unit. Lewis, the younger of the two, twenty-eight years of age, tall and thin, eager of face, a searching expression in his luminous brown eyes, was speaking. His brother, a practical, hard-headed business man, about ten to twelve years his senior, stood listening with bowed head in non-committal silence, a bored expression on his strong face.

"Look, Bill," spoke Lewis, pointing to a battery of gigantic, terrifically high voltage tubes, "you are beholding a rare scientific achievement—the birth of artificial super-gamma rays, which are in fact an approach to artificial cosmic rays. By bombarding beryllium with alpha rays supplied by speeding hearts of hedium atoms, but so arranged that hits are continuous, a type of radiation is produced similar to light and X-rays, only vastly more penetrating.

"Now, the amazing result of this is not the disintegration of the berylluium, but an atomic synthesis in which carbon is produced, with the release of energy in the form of these artificial near-cosmic rays. But the most important result from a practical standpoint is, that vastly more energy is given off than is put into it. In other words," eyeing his brother triumphantly, "aside from the actual transmutation of one element into another, I have succeeded in tapping the inexhaustible stores of atomic energy. Furthermore, I expect soon to be doing so on a commercial scale."

THE speaker paused for a moment, then continued with increased earnestness.

Suddenly the heavens seemed to open up . . . a blinding blue-white flash, a terrific explosion split the air. . . . Blinded and stunned, the youthful scientist was hurled bodily . . . he was falling—falling——

"As you know, Bill, it's over seven years that I've slaved away at this thing. I've sunk every dollar of my share of the estate into it, and all I could get besides, including all mother had to give me. Now I'm at the end of my string. I want you to help me put it across. I realize you are a busy man, and I should not be here taking up your time if I were not sure I was on the right track. All the experimental work is practically done. About five thousand dollars more will put me across. Will you do it?"

With tense expectancy Lewis waited for his older brother to give his assent.

"What do you say?" he urged, as Bill remained silent.

"What is there for me to say? You have known right along only too well my attitude toward all this tinkering of yours. I don't believe it's any good. You're wasting your time, Lewis. You're nothing but a dreamer. What you should do is go get yourself a job, into something that'll get you somewhere. Take my advice and quit losing yourself in foolish dreams."

Lewis bit his lips as he listened in chagrined disappointment.

"I see, then, that all my demonstrations and figures have gone over your head," Lewis replied sadly, a trace of bitterness in his tone. "Here I am on the very threshold of perhaps the greatest discovery of all time, and yet in spite of all my efforts, have failed to arouse your slightest interest. As a salesman, I guess I'm a failure."

Then his voice suddenly took on an impassioned tone. "But, Bill, can't you see, can't you realize, what an unlimited power produced at a trifling cost would mean to the whole world? It would not only make you and me, but would confer a boon to all humanity."

"Sure, of course; unlimited power at a trifling cost *would*. Any baby can see that. But why delude yourself with such fantastic ideas? It may be all right for authors who write for money in sensational periodicals to talk glibly of atomic energy, whatever they may mean by all such gibberish. Better experimenters and more educated men with better minds than yours have worked on the same idea long before you were born. Power from matter?—nonsense! I'd like to help you, Lewis, but I won't be taken in by such stuff.

"And while we are about it, I may as well tell you it's about time you cut out all this childish tinkering and went to work at something useful. Not only have you frittered away your entire inheritance, but you have used up your mother's as well. You owe it to yourself and your poor mother who needs your support. No one would object to your tinkering with anything you have a mind to, providing you do it in spare hours. Besides, I've already loaned you several thousand dollars with no prospect of ever getting it back; and that's as far as I'll go."

Saying which, and with another parting shot, "Cut it all out and get yourself a job," Bill strode out of the room.

SAD and dejected, the young scientist leaned wearily against the door jamb of his combination laboratory-workshop, dreamily watching the retreating form of his brother. So help from that source had faded out. What a vast difference there could be between two brothers born and nurtured under the same roof, Lewis mused to himself. Bill was made for the rough and tumble affairs of the business world, in which he was making steady headway. He had always taken a patronizing air toward his younger, "impractical" brother, and looked with ironical almost contemptuous disdain on the "kid's tinkering," as he called it. And "tinkering was all it appeared to be, for so far nothing of importance had come

of it. To Bill's way of thinking, why bother with such hair-brained sources of power, when this fine old world was full of good coal and oil and other forms of power? Besides, most inventors nearly always starved to death anyway.

Well, perhaps he was "wasting" his time, as Bill had put it, Lewis thought to himself. Nevertheless, nothing short of a cataclysm would stop him now. All the bulldog tenacity of his nature, all his idealism, the enthusiasm of the discoverer, hot on the trail of a long-sought quarry, spurred him on. No, he would not stop now, come what will.

He halted before a broken mirror on the wall, and gazed earnestly at his own reflection, pale and drawn with overwork; saw the dark shadows beneath his eyes, the strained lines about the corners of his mouth, the deeply sunken furrows on his brow. His gaze wandered downward . . . the clean yet badly worn suit, the shirt with several mends under the collar, the frayed cuffs, the faded tie, the shoes badly in need of repairs. For some time he was lost in deep contemplation, a slight frown on his face. Then a golden smile spread over his features, like the glinting sunlight from behind a cloud. Shaking himself, he turned to the whining apparatus, and soon became absorbed in his work.

He scarcely heard as the door quietly opened, and soft footfalls came toward him.

"Hello, big boy," a boyish voice, yet femininely soft and caressing, addressed him. "Won't you stop a minute to look at a fellow?"

The laughing voice of his most steadfast friend, Mary Stewart, sweetheart since childhood, jerked him out of his deep absorption. She stood eyeing him quizzically, a half mocking, half tender expression on her sweet face.

"Someday, I suppose, you'll up and marry this old machinery of yours on which you are spending so many delightful hours. Lately you seem to have no time for anything else. I'm frightfully jealous. You hardly come to see me, so I've come to see you. Maybe you don't want me." She made a face at him and frowned with mock sternness.

He grinned good-naturedly, and took hold of her hand.

She drew it away. "No, you didn't mean to put your hand on mine; you meant to put your hand on your ugly old machine. Go on, hold hands with *it*. There's where your heart lies."

"But all the 'ugly old machines' in the world mean less to me than one touch of your little finger, dearest." He swept her to him and kissed her lips hungrily, while she pretended to resist him. After a minute or two, she tore herself away and held him at arm's length.

"Just look at yourself," she scolded. "Dark under the eyes, strained and worn. Why, you're getting to be an old man before your time. If you neglect me much longer, I'll—I'll—and she buried her face against his shoulder.

"Mary, dear," Lewis suddenly spoke up in a sober tone, "I have something of great interest to tell you."

She looked up round-eyed and expectant, a crimson color mounting to her cheek. Her heart skipped a beat. What had he to tell her?

"At last I am on the right track. No mistaking it this time, Mary. Soon, soon I shall have completed one of the greatest scientific discoveries of all time. Then all my dreams will come true: fame, fortune, and—you." He looked into her eyes in a way which made her whole body thrill.

"Do explain it all to me," she cried, regaining her composure, and eager for more details of her lover's great discovery.

He led the girl over to the whining

and crackling apparatus, and began to explain its working parts.

"These huge tubes, which I expect to step up to sixty million volts or more, with their stream of force operating under the special control which I have devised, will literally pulverize the intra-atomic structure of matter, releasing enormous stores of the hidden energy. Heretofore the catch, in all atom smashing experiments, has been that the cost in material and energy was infinitely out of proportion to the results obtained. But with the utilization of this new principle which I have discovered and almost perfected, results of a practical nature can be achieved.

"And just think what all that will mean, dearest." The enthusiasm of the prophet gleamed in his eyes. "Homes and public buildings heated or cooled for a few pennies. Automobiles and railroads and airplanes that will run smoothly and noiselessly without refueling months on end. Metallurgy revolutionized. Industries operated at a negligible cost of power, bringing costs of all commodities down and down. Think of the hundreds of thousands, in all the mines of the world, released from back-breaking toil. No more niggardliness in the use of energy. Inexhaustible power always on hand, leading mankind on to the conquest of the whole universe. Why, even interplanetary travel, long the dream of dreamers, could, with the aid of atomic power, at last be seriously attempted; thus enabling mankind to exploit the illimitable resources of the whole Solar System and beyond, to the glorification and material as well as spiritual enrichment of all humanity."

At the conclusion of his glowing description of the grand possibilities arising from his momentous discovery, Mary smiled happily and said:

"Well, no doubt you know what it's all about. I don't. Guess my head was not made for such things. If you believe it, so do I. Come, let's go for a walk."

TWO weeks later, the enthusiastic young scientist was hard at it in his laboratory. The shrill hum and crackling of the powerful machinery smothe the silence of the early morning hour.

During those two weeks he had labored night and day, this time with the element mercury as the object of his experiments. Most strange and puzzling was the series of phenomena which had resulted from a terrific bombardment of that element with the unheard of voltages made possible by his improved apparatus. Something fascinatingly different was going on right before his trained eyes, accustomed as they were to the ordinary reactions of experimental physics.

Powerful glass in hand, he was intently scrutinizing a small quantity of the mercury as it was being bombarded at the terrifically high voltage. The dazzling focal point necessitated the use of a strong screen over his eyes. On his serious face showed a triumphant expression, the eagerness of the hound close to his quarry.

He pushed the control switch over still further. The crackling of the violent electronic stream grew more and more intense—sixty millions of volts—seventy millions! He reached over and gave a final shove of the switch into full force—eighty million volts! The room trembled and vibrated; the very air was surcharged with the intensity of the harnessed forces. Suddenly the heavens seemed to open up . . . a blinding blue-white flash, a terrific explosion split the air . . . the world rocked and toppled about his ears. Blinded and stunned the youthful scientist was hurled bodily. Things grew black—he was falling—falling——.

When he opened his eyes, Lewis found himself stretched out on the lawn, fifty

feet from the scene of the explosion, staring dazedly up at the blue sky. As if in a dream he saw his mother's face bending over him. She was bathing his forehead with cool water; blood oozed from a deep gash in his scalp. His senses rushed back to him.

"I've got it," he suddenly exclaimed with a sickly grin.

His mother examined him anxiously, and at the reiteration, "I've got it," a cloud came over her face. Then deciding that he was not seriously hurt after all, said: "There, there, don't talk. The doctor will be here any moment. Goodness it'll require a dozen stitches. I do wish you'd quit your tinkering after this; you worry me to death."

"Don't worry, mother dear; I'm all right." He patted her hand, and sat up. He took in the whole scene at a glance. The roof and two sides of his laboratory were completely wrecked; ruin and litter all about. By a miracle he had escaped with his life.

Before his mother could prevent him, he rose with a groan and rushed into the ruined building. To his intense relief, however, he found his valuable equipment, except for several of the huge tubes, practically undamaged.

A careful examination revealed to his expert eye the cause of the tremendous explosion—a premature release of an immense amount of the internal atomic energy due to imperfect control of the tremendous forces with which he had been playing.

The next few weeks saw Lewis hard at it, repairing the damage. But the explosion had proved itself to be far from an unmixed evil. In the future he would know how to prevent the destructive and premature recurrence which had come within a hair's breath of writing finis to his earthly activities.

Once more he began work where he had been interrupted by the explosion. Inside the protection of a newly devised, insulated control cabinet, his eyes were riveted on a small quantity of mercury which was receiving the concentrated bombardment of eighty million volts of electrical energy; beheld that which transfixed him with astonishment. For there, right before his scarcely believing eyes, a tiny mound of yellowish stuff, barely larger than the head of a pin, was slowly forming. For a long time he stood immovable, watching the tiny mound of yellowish, powdery matter as it grew almost imperceptibly larger.

At last he took a pinch of the stuff to his testing table. His eyes opened wide in bewildered astonishment. He spun back to the focal plate, carefully scraped the balance of the yellow powder; tested that also.

"Gold!" escaped from his tremulous lips.

Surely some mistake. It was not uncommon to find infinitesimal traces of gold in stocks of mercury . . . but such a large amount? . . . With the meticulous care of the scientist he proceeded to test his small stock of mercury for signs of hidden gold content. Not an atom. Could it mean? . . . Incredulity mounting, he turned once again to the focal plate. Powerful glass in hand, he saw with ever growing amazement another tiny mound of the precious metal slowly gathering. Under a powerful glass the stuff looked like tiny, golden snowflakes.

And then like a flash he saw it all. Of course, dunce that he was! In his search for the secret of the internal energy of the atom, he had stumbled unto a most valuable by-product—the synthesis of pure gold; had succeeded in accomplishing the dream of ages—transmutation of one of the baser elements into real gold!

A mighty wave of ecstatic triumph surged through him. His head swam. Truly it was hard to believe. His in-

tense absorption in the quest for atomic energy had blinded him to this other great discovery which had literally beckoned to him for recognition. But there it was: the tiny mound of gold dust was growing right before his eyes.

Now the whole thing was clear as could be. The atomic number of Hg or mercury, is 80, that of Au or gold, is 79. Since the charges of the protons and electrons in an atom are equal in magnitude and opposite in sign, the charges of protons equal the number of planetary electrons. Therefore what he had succeeded in doing was to add an electron, which carries a negative charge, to the central core or nucleus of an atom of mercury, thereupon forming an atom of gold. For since the nucleus of an atom of mercury has a positive charge of 80, when a negative electron was added, the nucleus was reduced to 79—and an atom of this charge is an atom of gold!

THE all important question now was, whether this synthesis was atomically of a stable nature and not subject to rapid disintegration; for the physical nature of matter usually prefers atoms of even to those of odd atomic number. Second, and from a practical standpoint, could this process of gold atom building be done on a profitable scale?

Then commenced more study and experiment, which soon revealed to the elated young scientist that, though the amount of gold his limited equipment produced was commercially not important, properly enlarged facilities could soon produce enormous quantities of pure 24-karat gold of an atomically stable nature.

But here was the rub: He had now spent his last dollar, and was in desperate financial straits. Where obtain the considerable finances to establish the production of synthetic gold on a commercially paying scale? Of course, he could, if he wished, go ahead in a small way to the extent which his present equipment allowed, and by selling the precious metal as it formed, slowly and gradually build up his own working capital. But this, however, would necessarily take a long time, and he doubted if he could wait that long. Besides, to make matters worse, he was right now in arrears for two months' power, and had been served notice that unless the bill was paid, service would be discontinued. And without electricity his gold-making would suffer a sudden demise.

Undaunted and determined to get going in a big way at once, Lewis boldly decided to enlist the aid of large outside capital. That, he believed, should prove an easy thing to do. For what man of means could fail to see the immense possibilities of a financial interest in this new kind of Midas' touch. Forsooth, he had but to demonstrate his miraculous discovery and men with unlimited money to exploit it would be at his feet.

Like most scientists and others of his type, Lewis Walling was better as a scientist than as a business man. Nor was he experienced enough in the business world to know that between the greatest of inventions and the full profit thereof, "there was many a slip 'twixt the cup and the lip," as the old saying goes; that the road of great discoveries and inventions is strewn with the bleaching bones of tragic hopes; that lucky indeed are the few inventors who live to reap what they sowed.

To Mary, to whom our young scientist confided everything, Lewis laid his plans. Though two years his junior, the young lady was much more practical than he, when it came to every-day affairs. She wrinkled her pretty brow in serious thought and counseled great care in the commercial handling of his momentous discovery. She doubted if it would prove

such an easy thing as all that to enlist canny-minded capital.

"What are your exact plans, Lewis?" she asked him with her characteristic common sense. "Whom do you intend to interest, and on what basis that will safeguard your rights?"

"Why bother with all that. Most any one with money will jump at the thing the minute they see it. As for the rest, that will work itself out as I go along. I can take care of myself."

Pride in the man she loved mingled with a worried expression on Mary's face. For a while they debated the question.

"Why not see Wilbur Morris, the mining man," Mary finally suggested. "He is heavily interested in copper, silver and gold mines. From all indications he should be the logical man to interest."

HAVING decided, Walling set out light-heartedly the next day to interview the great mining magnate, with a sure feeling that the latter would snap up an offer of a substantial interest in his great discovery in return for financial backing. On the way he regailed himself with pleasant fantasies of his coming opulance.

Upon arriving at the main offices of the enormously rich mining man, the enthusiastic scientist went directly to a young lady sitting behind a flat top desk on which stood a neatly framed sign, "Information."

"I wish to see Mr. Wilbur Morris," Lewis requested with the air of one who expected immediate compliance.

"Mr. Morris is out of the city for a few days," the smiling young lady informed him.

Walling went away but returned in a few days, but was disappointed again.

"Mr. Morris is in conference and will be unable to see you. Would you please leave your name?"

Upon returning later in the day, Lewis, impatient and irritated, was informed by the polite information girl that Mr. Wilbur Morris would be unable to see anyone that day. However, if he wished, he could see his secretary.

Another long wait. Finally a young man emerged from a door at the far end of the waiting room and came up to the low railing which fenced off the visitors.

"I am Mr. Tracy, assistant secretary to Mr. Morris. Anything I may do for you?"

"I wish to see Mr. Wilbur Morris personally on a matter of great importance."

"Impossible just now," the under secretary spoke evasively. "But if you will please state the nature of your business, I'll see what I can do."

"The nature of my visit requires a personal interview with Mr. Morris only. I know he'll be greatly interested."

The under secretary looked at him curiously and seemed to hesitate. "Very well. Wait here a moment."

After the lapse of an extremely long "moment," the girl at the information desk directed Lewis to a door at the end of a long corridor. On the glazed panel read, "A. W. Hall, General Secretary to Wilbur Morris."

Entering, he was approached by a young woman, who upon receiving his name, said: "Oh, yes, please be seated. Mr. Hall will see you in a few minutes."

Followed another "few minutes" that had no likeness to the earthly variety. At last he was ushered into the presence of a pink-faced, bright-eyed middle-aged man. The latter gave the visitor a pleasant greeting, and waited for him to speak.

"I came to see Mr. Morris on important business."

"May I take care of it?"

"I must see Mr. Morris personally," Lewis replied almost testily.

"Sorry, sir, but unless you care to

state the nature of the business, I'm afraid it'll be impossible to arrange an interview."

Realizing at last that a man of Morris' standing was not to be easily interviewed by anybody who wished to do it, Lewis reluctantly replied:

"I am a scientist, in possession of a most important gold-producing process which I am sure will mean a great deal to Mr. Morris and his company."

The general secretary looked the speaker up and down, in swift appraisal of his near-shabby appearance. A soft "Yes?" was all he said, and waited for the young man to go on, the while he was turning over in his mind for the quickest way to get rid of the caller, with due regards for polite business etiquette. The secretary was not new to the importunities of countless, impecunious inventors and cranks who constantly besiege the officials of great industries with their sure-fire inventions, that "promise to revolutionize the industry." Yet there was something in the burning eyes of the young man, his scholarly face with its indefinable spiritual expression, his personable appearance, which no amount of shabby clothing could altogether efface, that was entirely different from what was his wont to come up with in the every day duties of his office, and which held the secretary in spite of himself.

After a short silence, the youthful scientist, his face relaxing in a golden smile, added as if he took it as a matter of course: "I shall be most grateful to you, Mr. Hall, if you would arrange an interview at the earliest possible moment."

"Very well. If you will call me tomorrow at this time, I shall tell you when Mr. Morris will see you."

CAME the long awaited moment when at last he was granted an interview with the great mining magnate. Wilbur Morris was a tall, powerful looking man with a large, bald dome, and a "poker face," immobile and expressionless. A perpetual cigar was firmly clipped between large teeth. Shrewd steely eyes took the scientist in from head to foot. Without uttering a word, the magnate waited for the caller to begin.

Scarcely had Walling gotten fairly started, when the mining magnate shifted the cigar in his mouth, and staccatoed the words, "Thanks very much for the proposition. Very kind of you but am not interested." Rising, he signified all too plainly that the interview was ended.

Taken completely off his feet by this curt ending of the interview, and loath to be dismissed without a full hearing, or still more important, an opportunity for a convincing declaration, Lewis Walling made no move to go.

"Why, Mr. Morris, you haven't even heard my complete story, let alone a demonstration that will prove it."

"Sorry, young man, but I'm not interested." The magnate's keen eyes bored into Lewis' with an almost resentful stare.

"But you would be, if only you would be so kind as to hear me out."

With polite distainfulness, although clearly impatient for his visitor's departure, the mine owner gave silent acquiescence for him to finish.

"As I stated before," Lewis began speaking rapidly, eager to finish before he should be interrupted, "I have discovered a basic physical principle of an atomic nature, the proper utilization of which will transmute a baser element, specifically mercury, into pure gold."

"Oh, have you?" with a strong ironic inflection, came from the bored listener, as he raised an eyebrow and gave the young man a side-wiping glance.

"I have absolute proof," Lewis hastened on. "You see, by adding a negatively charged electron to the nucleus of

an atom of mercury, which has a positive charge of——"

"Yes, yes; no doubt it's a good thing," the mining magnate broke in, "but really, I'm very busy now."

Lewis began to expostulate, but before he could utter a dozen words, he was rudely cut short.

"I'm sorry, young man, but I have no time for foolishness. Besides," and a mocking curl shaped his thin lips, "When I want gold, I know where to get it. My advice to you, son, is to get yourself into something worth while. You know, this is not the age of fairy tales. Good day!"

Disappointed and chagrined beyond words, and smarting keenly from the magnate's saw-edged words, Lewis turned and walked almost mechanically out of the office. Almost without knowing it, he found himself walking along the street. "The fool," he kept muttering between his clenched teeth. "The empty-headed abysmal fool. No time for foolishness, eh? I'll show him. I'll make his precious gold mines about as useful as a load of coal in hell." He raced home gesticulating and muttering to himself all the way, unmindful of the smiles his actions brought to the faces of passers-by.

LEWIS determined to go ahead on his own in the best way he could.

"I'm through wasting time chasing after myopic money-grubbers who lack the imagination, let alone the scientific background to grasp the significance of a great new discovery." In such fashion he delivered himself to Mary, who listened gravely but was not altogether surprised at Lewis' reception by the mine owner.

On the other hand Lewis wondered whether the mining magnate wasn't right after all. What need had a plutocrat of Morris' type, sitting as he was on top of the world, for more gold? But then again, why did he and others innumerable of his kind persist in the fanatical process of piling up more money when they already had more than could possibly satisfy the need of any sane being!

Starting from scratch, and with help of the meager capital which Mary had saved through self-denial, Lewis Walling got away for a start that was destined to echo around the world. Despite his scanty resources, he managed nevertheless, by dint of prodigous labor and rare technical skill, to increase his output to a point where he could begin producing gold in small but far from negligible quantities.

"Almost two hundred dollars worth," he exclaimed jubilantly to Mary one afternoon, holding aloft the little pile of yellowish, powdery stuff before her amazed eyes. "Took two weeks of hard going, but here it is." He grabbed her waist and danced around the room. "I'm going to sell this at once and apply the proceeds toward increasing the productive capacity of the plant. This I'll continue to do until I let loose a flood of gold that will make old gold-grubbing Morris look like a piker."

In pursuance of his plan, the young scientist betook himself triumphantly to a local jeweler, a small box containing the precious metal carefully tucked away in his coat pocket.

The jeweler, cannily cautious, took the scientist's offering with a critical eye. Very deliberately he proceeded to test its fineness by means of several drops of nitric acid. Though apparently satisfied as to its pristine purity, he screwed his magnifying glass to his eye and examined the powdery gold with the greatest interest.

"Well!" the puzzled jeweler ejaculated after the seller had departed with

good U. S. currency in exchange for the coveted metal. "Wonder where he gets it in such extremely fine powdery form. Never saw it that way before. Pure stuff all right though," he mused. All the same he again tested a pinch of the powdered metal, and feeling reassured of its absolute purity, picked up the box and carefully deposited it in his safe.

A week later Lewis again appeared with another but slightly larger quantity of the gold. The jeweler took it, going through the same careful procedure, the while his eyes shifted swiftly several times from the metal to Lewis' face in silent query. But when the scientist appeared a third time shortly afterwards with a still larger quantity to dispose of, the over-cautious tradesman, after long, meticulous testing and weighing and fingering and squinting through his magnifying glass, pursed his lips, puckered his forehead in perplexity, and slowly opened his mouth to speak.

"Say, where do you get all this stuff?" he finally burst out. A suspicious glint showing in his sharp, gray eyes as he took in the rather shabbily dressed young fellow who had so much gold to sell.

"Why, er—you see—" shifting rather uneasily, nonplussed by the sudden tone of the question—"what's the difference? Pure gold, isn't it?"

"Y-yes; but if I'm to buy any more of the darned stuff I've got to know where you get it."

STUNG by the pointed implication of the jeweler's query, the gold maker, flushed and angry, picked up the small box of the yellowish metallic powder, and with a parting, "It's not faked, strayed or stolen," strode rapidly out of the store. In the doorway he bumped hard into someone who was just then about to enter.

"Oh, beg pardon, Mr. Morris."

"Sorry," was the curt rejoinder, glaring with ill grace at the young fellow who had nearly bowled him over.

The store-keeper, after greeting the mining magnate with great deference, remarked: "See that chap who just went out?"

"Not only saw him, but felt him. What about him?"

"Says his name is Lewis Walling. He's been selling me something which rather puzzles me. I'd like to show it to you; being as you're a mining man, it may be of interest to you. With that he produced a box containing the two previous purchases and held it open for the other's inspection. "What do you make of it?"

The magnate sifted a pinch between his fingers, lifted the box and its heavy contents up and down. "Well, what is it?" his face the usual blank.

"Gold!—24-karat fine."

"Did you test it?"

"Sure."

"Then why ask me, if you know what it is?"

"But I never saw it in such exceedingly fine powdery form."

"Why didn't you ask him about it?"

"I did, but he got angry and ran out."

"Humph, rather strange."

True to his reputation of being a man of few words, Morris dropped the conversation. But on his way home he sat stiffly on the luxuriously upholstered rear seat of his car, musing over what the jeweler had told him and tried vaguely to recall the details of the brief interview he had had with that persistent young fellow, who had made such scatter-brain claims. "Rather odd, rather odd," he spoke softly under his breath.

FROM time to time Lewis continued selling the gold powder to various dealers. With the proceeds he steadily improved and enlarged his facilities. This in turn enabled him to transmute ever more and more mercury into the precious

metal. In time he began shipping larger and still larger quantities direct to the U. S. Treasury, which under the law purchases all gold that is offered it, and is glad to get it. To avoid curiosity, he shipped the metal melted down in bullion bars. And as his financial power grew, the size of Walling's gold shipments, not only to the government mints but to industrial markets, also grew like the proverbial, swift, gathering snowball.

It was inevitable that before long this tide of new gold should force itself into the attention of the responsible U. S. Treasury officials, who thumbed their noses and wrinkled their thoughtful brows and grew more perplexed as they asked each other questions which none could answer. But under the law of the gold standard, they could see no alternative but to continue buying up the yellow flood.

But a time came when the size and frequency of these formerly welcome shipments attained such gigantic proportions that something truly had to be done about it. If continued at the rate the shipper was pouring it in, the high government officials as well as high financial circles doubted not that the gold standard of the world might topple of its own weight. Worse still, and aside from the possible threat to the established standards of money and exchange, with the concommitant dislocation of trade and industry, the great influx of this new gold, unless properly controlled, was bound to bring about a tremendous rise in the price of all commodities to an extent which might result in a great upheaval of the entire economic and social order throughout the wide world.

This unprecedented situation was not long in coming to a very interested attention of the influential Mr. Wilbur Morris. The worthy gentleman, aside from being a more than substantial producer of gold, was also a power in the banking and financial world. He was therefore duly impressed with the size of the new golden flood. Decidedly he began to feel it his duty, for the welfare of society, that he should take some action at once, although in what form he was for the time being at a loss to decide. The law, making it mandatory for the U. S. Mint to buy all gold offered it, might have to be abolished—but no, that would never do, what of his own production which steadily poured forth directly and as valuable by-products from his many mines. It was something to think about.

But the more he thought about it, the more perplexed he was. Every possible solution was bound to cut off his own nose. A decidedly unpleasant situation to be involved in, and with such a heretofore staple and worshipful element as gold.

"Hang that fellow Walling, any way," he exclaimed more than once to himself. "Too much gold." Dark visions of his valuable gold-mining industry taking a disastrous slide downward came before his eyes. In spite of himself, though it ruffled his dignity and self-assurance, he began to think more and more of that curt interview he had granted that scatter-brained young fellow who claimed he was a scientist. Why, he didn't even have a decent pair of shoes on. And that fantastic idea of his. . . . Distinctly there now came back to him the remembrance of the eager-faced young man who so earnestly yet so vainly had tried to interest him in his crazy gold making venture. The possibility of such a thing even now seemed so absurd, so foolish. And yet, by all the present signs, who had been the foolish one? Had he indeed muffed an opportunity such as comes to one only once in the centuries! This thought was so unpleasant that he

shook his head in a spasmodic effort not to think about it.

THE first plan of the iron-fisted mining magnate was to force Walling to submit to a quiz before the Senate Committee on Currency and Finance, to reveal the real origin of his golden cataract. It would make it easier to deal with. A past master in the gentle art of political wire-pulling, as well as in the manipulation of powerful lobbies in the nation's legislative halls, to invoke such an investigation by the Senate Committee should be child's play.

On second thought, however, a craftier idea seized him. Why not somehow turn the perplexing situation to his private gain? Why not! He conjured with the pleasant thought, turning the possibilities over in his mind. Walling had been so overwhelmingly eager and simple, and his (Morris') prestige and his power to dominate others so great, it shouldn't be much trouble to take the fellow in hand. Inventors usually were such namby-pamby, unpractical chaps, who were more interested in grubbing around with books and experiments than anything else. Anyhow he'd know how to handle him.

A few days later, Lewis received the following brief communication:

"Please call at the writer's office at your earliest convenience regarding your device which we discussed some time ago. After due consideration have decided to look into it further and see what can be worked out.

Call my secretary and arrange for interview.

Very Truly Yours,
Wilbur Morris."

Lewis turned the important looking envelope bearing the neatly engraved magnate's insignia over in his hand. As he leaned back in his desk chair and read the business-like missive, granting him a belated conference regarding the epochal invention of which he was now complete master, with no possible further need of anyone's financial assistance, a broad smile suffused his face. Lips grimly tightening, he dictated a reply, short and terse:

"Dear Sir: Replying to yours of even date, please be advised that 'I have no time for foolishness.'

Yours Very Truly,
Lewis Walling."

When the Right Honorable Wilbur Morris, former senator, owner of mines and wielder of finance, read the answer, his comely, young assistant secretary who had laid it on his desk and stood by at respectful attention, grew frightened, when she saw her employer suddenly attacked by what to all appearances was an apoplectic stroke. The great man turned scarlet, then violently purple, and black. His full red cheeks and nostrils and thin lips drew in and out with a peculiar wheezing sound, but without uttering a word.

"Well! . . . he at last exploded. "The nerve of that damned ragamuffin!" And suddenly the young lady was treated to a flood of redolent, none-too-flattering verbiage anent the impudent inventor, which had that worthy young man been present to listen, would have burned his rather sensitive ears completely off him.

"I'll show him—that damn—that damn" —and bringing his one time hard but now flabby fist hard down on the elegant desk before him, with such force as to cause the gentleman to wince, the irate magnate dismissed the girl and was left to finish his fuming by himself.

SELF-CONFIDENT and resolute, Lewis Walling stood before the in-

quisitorial Senate Committee on Currency and Finance, having been summarily ordered to appear for questioning by that august body. He was irritated and at the same time highly amused by this seemingly asinine investigation to which he could see no point. As he looked about him, he noted the poker-faced Mr. Morris among a number of spectators present at the hearing.

"Now, Mr. Walling," began the deep voice of Senator Halloway, his face solemn of mien, as if the salvation of the entire nation depended upon him, "this Committee, of which I have the honor to be the Chairman, wishes to know the mysterious source of the unheard of quantities of gold which appear to be under your control. As you no doubt realize it is a matter of the greatest importance to the monetary and economic stability of the nation. Therefore please let me remind you in advance that evasion or refusal to answer any and all questions put to you by this duly authorized Committee will cause you to be cited for contempt, punishable under the law."

LEWIS cleared his throat. "As to the "mysterious source," as you call it, of the gold I am offering at the accepted standard price, I may say that that source transgresses no law, legal or moral. I fail to see the reason for this hearing, in so far as I have injured no one. As a matter of fact, in view of the world-scarcity of the metal, which everybody everywhere in all ages has been straining after, I should think that you would be glad to get it and say nothing about it."

"Come, come, that is not the point. This committee has the unequivocal right to know how and where you manage to obtain such quantities."

"I question that right, so long as I obtain it honestly."

"In that case," one of the Committee spoke up, "why hesitate to tell us?"

"That, for the present, is for private reasons of my own and is entirely within my rights as a citizen. In due time I shall apprise the world of my secret, but not now."

"Mr. Walling;" another of the Committee addressed him, "Has it not occurred to you that, aside from other measures, the law might be amended so that the treasury would refuse to buy any more gold? Then what?"

A faint smile played over Lewis' mouth. "In that event, I should say that England, or France, or Germany, to mention only a few, might be delighted to take all I could ship them."

"What if the United States government put an embargo on all out-going shipments?"

"That no one has the power to do. The source is mobile and can take itself where it will," Lewis replied enigmatically.

The members of the important Committee looked at each other, quite puzzled at such an unexpected answer.

"But, young man:" Senator Halloway's voice boomed, "please visualize the incalculable damage which may result from an uncontrolled supply of gold coming in such unlimited quantities."

"I refuse to visualize or admit the 'incalculable damage' you speak of. In the first place, please allow me to assure you that the source of supply *is* under perfect control—and I am the controller. Secondly, the world is badly in need of more gold right now, and lots of it. So far there has not been enough to go around."

The senatorial chamber grew tensely quiet, as he paused a moment before going on.

"Mr. Chairman and Members of this Committee: Allow me to dwell on a few

facts that are so common place that no one stops to think about them. For centuries gold has been the best accepted medium of exchange ever known. Its relative scarcity, its many admirable qualities, its steady, general world-wide demand throughout the centuries, including its industrial and ornamental uses, has never failed to enthrone it as the medium of exchange *par excellence*. No one has been able to imitate it, substitute for it, falsify it, or obtain it without working for it.

"Consider the history of the last two centuries alone, and particularly the first third of this century. The advent of the machine age has brought a steady increase in the power of mankind to produce an ever-increasing flow of created wealth, both in the tools of capital value, as well as in world demand commodities. Until recently, through sheer luck as it were, the volume of money based on gold was able to keep more or less even pace with this material and industrial growth. Time and again, just when created wealth outstripped the amount of monetary gold necessary to keep exchange fluid, there came a happy new strike of gold somewhere on the globe, each time preventing a world wide panic of incalculable duration. Witness the days of '49, Colorado, the Klondike, and latterly the Rand in South Africa.

"To-day no one knows if any large undiscovered sources exists anywhere on this planet. The natural output of all the known gold mines in the world is limited. But still the whole world clamors and hungers for more gold and still more gold. It is this peculiar shortage of the best accepted basis of real money that hampers our present industrial system; and like lack of sufficient oil in a high speed machine, has finally slowed up world industry and international exchange, till it threatens to bring our present order to a grinding stop."

LEWIS paused in dramatic silence, then went on.

"Here I bring to you the gift of the gods—gold, and plenty of it, at least until such time as the natural shortage is relieved. Would you turn away this offer of a plentiful supply of the necessary life blood of our economic order?

"In turn I ask you to visualize what an ample supply will do to start the wheels of our sick economic order going. With an ample supply of gold as the basis of real money, which everybody will accept with confidence, money and credit will become plentiful, bringing about a healthful expansion in all lines, ushering in new life and hope. Prices of long depressed commodities will rise, farm products and land values will go up, labor will receive higher wages. Consumption will then increase by leaps and bounds, causing a demand for the world's goods that will put a sudden end to the unspeakable horrors of unemployment. Millions of men and women now sunk in hopelessness and despair will lift up their faces to the sun once more. The much dreamed of hope for the general return of prosperity shall have become an accomplished fact instead of being 'just around the corner.' Only then shall we be able to avoid a possible world revolution that might in the general upheaval get entirely out of hand, destroy our civilization and usher in a new and mightier Dark Age whose end no one will know."

After Lewis had delivered his speech, which he did in a clear but impassioned voice, he sat down. And nothing the entire Committee would say availed to draw another word out of him, beyond stating emphatically that for the time being the secret must remain his. The Chairman adjourned the meeting without stating when another hearing would take place.

EARLY one morning a few days later, as Lewis Walling entered his office, which was just off his now much enlarged laboratory and workshop, he was shocked to find everything in a topsy-turvy state. Drawers had been pulled out, the contents strewn all over the place. One of the rear windows had been forced, the steel protecting bars neatly cut with an acetylene torch in the hands of an expert.

Anxiously he ran into the laboratory and looked around. To his great relief nothing seemed to have been touched. No part of the delicate machinery nor the great battery of high voltage tubes had been harmed in any way.

He puzzled over the meaning of this, for he carried no money in the place, and no professional burglar would go to all that trouble on a mere chance. His gold-making activities so far was a strict secret known to but a trusted few. Nor, if it were gold that someone who had gotten wind of his operations was seeking, had even an ounce of the considerable quantity stored in the room been touched.

But upon gathering up the scattered papers and making a closer check, he soon discovered the reason for the break-in: his collection of well made and exceedingly accurate drawings, including details and figures of his formulas, was missing. At that his face broke into a broad grin, and he laughed softly to himself. And well he could afford to laugh; the thief had taken only his earlier experimental plans and figures, imperfect and unworkable. The real, working set of plans and secret formulas, which had taken so many grueling years of intense thinking and experimenting to iron out, before the intricate process of synthesizing gold could become an accomplished fact,—all these were safely under lock and key elsewhere.

"Somebody has wished himself a real nut to crack without the perfected plans," he spoke aloud to himself. "Like to be present when the party or parties try to make head or tail out of it—welcome to blow himself up as I came near doing. Guess I had better look out for any more callers with such scientific interests."

This sinister proof that some inimical interest had definite knowledge of his gold making industry, and was endeavoring to obtain the secret of the process, made him feel very uneasy and gave him much food for thought. As a precaution he dismantled his entire equipment and secretly moved it to another part of the city.

Late one night, just as he was leaving his secret work-place, after carefully locking the door, he was suddenly accosted by three masked men, and at the point of a revolver ordered to unlock the door.

"What's the meaning of all this?" he demanded, at the same time realizing the inaneness of his words.

"You'll soon know, buddy," answered one of the men in a thick voice. "Just be a good little boy and do as we tell you, and we'll let you go home presently; otherwise you'll go where all bad little boys go."

Lewis sullenly faced the three men after admitting them inside, and waited for them to make known their demands, which he anticipated only too well.

"Now, then," the one who seemed to be the leader spoke in a muffled voice, all but his eyes disguised under a gray mask, "what we want is a complete set of the plans for that little business you are engaged in—you know."

"Wouldn't you just like to know!"

"Come, be quick about it; we have no time to fool around—we mean business."

"And what a business," Lewis spoke up with caustic dryness. "Seems to me this is more in the line of thieves and high-jackers—not for the gentlemen

which, unless I mistake your general appearance, you no doubt pose for in daily life."

The three exchanged swift glances which did not escape the scientist.

With a savage, "Shut your trap," two of the men started to ransack the place, while the third stood guard over the captive. Chagrined and furious at not finding what they were seeking, the leader turned upon Lewis.

"If you refuse to reveal the whereabouts of those plans, we might find other if less pleasant ways of making you tell."

"Torture me I suppose. Shouldn't be surprised that you're not above that."

"Let's make him demonstrate his process," one of the others, a muscular, youngish looking fellow, spoke up. "We may get all the dope we want that way."

"Ah, but, my dear friends," Lewis parried with exquisite irony, "don't you know 'you can lead a horse to drink, but you cannot make him drink it?"

"We'll see about that. Popular sayings are not always true."

A SHARP jostle followed; the nose of a gun was pressed against his ribs, and Lewis was marched into the laboratory.

"Now, get this machinery agoing, and be quick about it," ordered the leader.

Lewis remained silent, stubbornly immovable.

"Guess we better get him to loosen up; we haven't time to monkey around. Tie him up," the leader commanded. With that they pounced upon their victim, and after a brief but furious struggle during which the ordinarily pacific young thinker drew blood from more than one well directed smash to noses and mouths, his enemies succeeded in trussing him up.

One of his captors, with a cruel gleam of his eye, then began heating the pointed end of a sharp instrument over a Bunsen burner. "A few touches of this will soon open up his trap," he spoke brutally.

White-hot instrument in hand, he approached the helpless victim, who stared back unflinchingly. His captors did not know they were dealing with a man of indomitable will, who in addition was possessed of a martyr spirit, that could withstand almost any amount of torture.

"Now will you do as we tell you?" spoke the one with the white-hot instrument, at the same time drawing the point close to Lewis's bared neck, so that his flesh quivered involuntarily from the near contact. "A touch or two of this will soon make you change your mind." The point came closer, contacted. At the first sickening smell of burning flesh, the leader blurted out: "Cut that out; I don't believe we want any of that. There are other ways of finding out. The machinery is all here to work from, and we should have no trouble figuring out how these contraptions work."

TIED to a chair, his hands fastened behind him, Lewis looked on in an agony of apprehension as the men, two of whom seemed to be mechanical experts, experimented with the delicate apparatus. They took down detailed drawings of the working parts, inspecting and measuring each piece.

While they were thus engrossed in their work, Lewis kept straining at his bonds; felt them give ever so slightly, although it hurt cruelly. Evidently his captors, whatever their other qualifications, were not experts in the gentle art of tying humans. Lewis hands which were small and very pliable, after much torturous twisting and turning and pulling managed to slip from their bonds. Absorbed in their work, the others failed to notice as with free hands he surreptitiously loosened the rope which tied him to the chair.

Watching his opportunity when their backs were turned, he slipped the last of his bonds, and with a sudden leap made for a side door only a few feet away. Before his enemies could recover from their surprise, he had unbolted the door, and was sprinting down a long hallway toward a steel shuttered window at the far end. The others came cursing after him. With desperate haste he threw open a window opening unto a side alley, and without hesitation leaped headlong outside. But he missed a clean getaway by only a split second. One of his pursuers, catching at his foot in the very moment of leaping, threw him completely off balance, causing him to fall heavily to the stone pavement, breath and senses almost entirely knocked out of him.

Dizzy and in great pain, Lewis managed to get to his feet in a desperate effort to make the open street ahead of his enemies. He stumbled forward shouting for help, every step mortal agony, a horribly strained ankle all but refusing to support his body. In a thrice his enemies were upon him. A violent blow on the head laid him supine on the cobble-stone pavement.

WHEN Lewis came to, he was lying on the floor of his laboratory, this time bound securely hand and foot. A trickle of blood was coursing down his face from an ugly scalp wound, whether caused by his fall or inflected by the blow of a weapon he did not know.

"Told you, sonny, you'd get hurt if you tried monkey business," one of the men remarked, as he leaned over him. "Now behave yourself, will you? while we go to work."

"For my part you may go to hell," answered Lewis savagely.

In reply, the man, his left eye redolently eloquent from the former contact with Lewis' fist, gave him a brutal kick.

The three men then turned their backs on their captive, and once more busied themselves with the study of the complicated gold-making apparatus. They strove for hours to unravel the secret of transmutation without success. Walling watched their futile efforts, chuckling betimes to himself. Not only was the process, to the solution of which he had brought rare genius and years of intense research, most highly intricate, but, as fortune would have it, he had just recently dismantled a large portion of the mechanism to effect some needed repairs. And well he knew the secret would not yield easily to the uninitiated.

Two of the trio seemed to be doing most of the work, goaded and proded on by sarcastic remarks about their "swell abilities," which their leader hurled at them. "Thought you fellows knew things. I should think you'd have had it figured out and running long ago."

"Sorry, but we're doing the best we can," one of the others answered. "Several important parts are missing, and the whole works appears to be in a considerably dismantled state. Might as well tell you its going to take a long time to figure it all out and get it running, unless we can force him" (jerking his thumb in Lewis' direction) "to help us."

At last, impatient and exasperated by Lewis' stubborn refusal to help them and by their own inability to get the intricate apparatus functioning, the trio set upon the helpless inventor like furies in a brutal attempt to wring the secret from him. They commanded and threatened; they kicked and beat him unmercifully; but all to no avail. He endured all in stoical silence. In final exasperation, the leader aimed a vicious kick at the young scientist which almost rendered him unconscious.

"You fool," he snarled, "you might have spared yourself all this. We'll get this thing a-going or ruin it, if it takes a month. If necessary we'll dismantle the

whole works and truck it away elsewhere to finish. Go ahead, you fellows, without him," he commanded the others.

Numb with pain and scarcely more than half-conscious, what of the terrific beating, Lewis rolled on the floor, watching their futile attempts to assemble and start the strange and complicated machinery. More than once he saw them bungle in their handling of delicate parts which had taken him years to perfect, and he almost groaned aloud for fear they would wreak damage that would entail months of hard work to duplicate. If only he could reach the telephone, so near yet so far. Nor could he expect unexpected help from the outside. His absence would not be felt, for his mother was used to his being away many a day and many a night when he was absorbed in his work.

In desperation, and yielding to an idea which he had been turning over and over in his mind, he decided on a bold move.

"Stop!" he cried out. "You'll ruin everything with your clumsiness, you louts. Release me, and I'll help you get it to working, so you can finish with your crooked work and get out."

"So! Thought you'd become reasonable after awhile," exclaimed the leader, a triumphant look in his eyes at the prospect of wringing the much desired secret out of the discoverer. "Might as well work with us, sonny, for we intend to keep you with us until we make it or ruin it. But mind, no fooling or trickery, or we'll knock your damned head off."

"Oh, don't worry yourself about that. I'm quite ready to believe you'll not hesitate to stoop to murder to gain your end."

IT was well along in the early hours of the winter's morning, when Lewis Walling was putting the finishing touches to the completed assembly of the gold making apparatus. Everything was all but ready to go. A gleam of vindictiveness shone in his eyes. His captors looked on with fascinated interest as the scientist went about his work with the sure hand of the master. Now and then, as the work progressed, the leader would rub his hands with evident satisfaction.

When at last the final connections were made, Lewis, without saying a word, and before the others realized what he was about, stepped inside the insulated central control cabinet, which protected the operator from the dangerous high voltage rays, deliberately closed the shield and threw over the huge switch . . . The lights in the room suddenly went out . . . then a blinding flash, a rending, sputtering roar . . . an earth shaking crash. The whole building quivered and swayed; things flew about. The control cabinet with Lewis in it was torn from its moorings and hurled against the walls.

Followed the silence of the tomb.

Lewis staggered out of the cabinet, badly shaken but unhurt, and looked around at the havoc he himself had wrought by a momentary loosening of the atomic Genie. With cold deliberation of do or die, he had reenacted the same experiment which had first revealed the great secret to him and had well nigh cost his life.

He leant over his inert enemies, as they lay crumpled on the floor, their clothes almost torn from their bodies by the explosive surge of the atomic forces. He felt of their pulses and put his ear to their hearts; they were still breathing. He heaved a sigh of relief. They began to show signs of movement. Quickly he bound his enemies hand and foot with copper wire. He was not going to take chances on having the tables turned. He diluted a little alcohol with water and poured it down their throats. One by one they opened their eyes and came to. They were out, but not seriously hurt.

The explosion had torn off their disguises. Lewis gasped when he discovered their identity.

"Well, of all people! If it isn't my old friend the Right Honorable Wilbur Morris! How are you? And who may these good people here be? if I may inquire. Pleased to meet you; never had the pleasure," bowing with mock politeness to the other two, who scowled in silence. He knew them only by sight, as engineers in the magnate's employ. One of them, a strapping fellow, whose hair and moustache had been almost entirely singed off him, presented a comical sight. He groaned as he tried to rise.

"Why didn't you announce yourself, my good friend," turning to the mining magnate who was stretched out on the floor in a not too comfortable and still less dignified position. "Why all this camouflage?" Stooping, he tore off a dark wig, revealing the broad shiny pate underneath. "I did not disguise myself when I called on you."

"Show is over, friends," he went on in ironic banter. "Had an exciting time at your party while it lasted. Now we'll just invite the police to join us in the fun. And come to think of it, guess I'll also invite a few nice news reporters, who I'm quite sure will appreciate a good story these dull times."

At the last words, the men cringed. With blanched and crestfallen faces they begged and entreated not to be exposed, promising all sorts of ludicrous and impossible things. For answer they received a mocking laugh, as the scientist with delicious pleasure proceeded to call in the police and reporters.

* * * *

THAT same day a national sensation was created when the press and radio came out with ringing news of the strange kidnapping, and the scientist's dramatic get-away. Along with full details of what transpired during the long night in the unknown, secluded laboratory, and the brutal handling of the luckless victim, of which he bore many telltale marks, were featured photographs of the prominent characters involved in the sensational case.

Following on the heels of this, but more strange still, and of world-echoing interest, was the epochal announcement by Lewis Walling himself of his marvelous discovery. The public was amazed. "Greatest Discovery of All Time," "Synthetic Gold," "Dream of the Ages," were some of the flaming headlines.

A world-wide symposium on the benefits or dangers of the new discovery immediately sprang up. Opposing schools of thought took sides and debated its possible influence for good or ill on the established order of society. Some were for absolutely prohibiting the artificial manufacture of such an all important element as gold. Others called on their respective governments to urge the United States Government to commandeer the process and operate it under international control. Still another school staunchly held out for gold and still more gold by whoever could produce it, and allow things to work out by themselves under the laws of supply and demand. Many timid souls did not know which side to espouse, and were frankly worried and ill at ease. And along with a veritable deluge of mail, which came to Lewis Walling, containing commendation, adulation, or the opposite, not to mention offers of marriage by many of the fair sex, came not a few of a threatening nature written by cranks and fanatics.

* * * *

A few months later, to the relief of the entire world, the now famous scientist turned over to his great Government the entire secret science of his gold-making art.

THE END

The Alchemy of Ian Bjornsen

By WARREN F. DOANE

We are glad to present the work of a new author to our readers. It is a strange and rather thrilling description of a wonderful bath and of what is brought about and how it is actuated by its connections as devised by the scientist inventing it. It will hold the attention to the end, which is somewhat startling.

Illustrated by MOREY

TWICE before, within a period of some three years, Fred Robertson and I had met in different parts of the world —I in my regular line of selling steel rails, he upon business which he did not see fit to reveal and I had no curiosity to know.

We had come together first in a compartment of the Liverpool-London Night Express. Apparently we had landed from the same ship, although I had not seen him before. Certainly I should have remembered him if I had, for he was of rather unusual appearance. Tall and angular, almost to gaukiness, he nevertheless gave one the impression of tremendous physical strength. His almost shabby clothes hung loosely upon him, and a reddish brown beard, that was permitted to grow long and unkempt, gave added evidence that he cared little for the externals. Here and there in the mop of hair that thatched his massive head were spots of pure white, and across the back of his right hand and wrist ran an ugly scar that had the appearance of a deep acid burn.

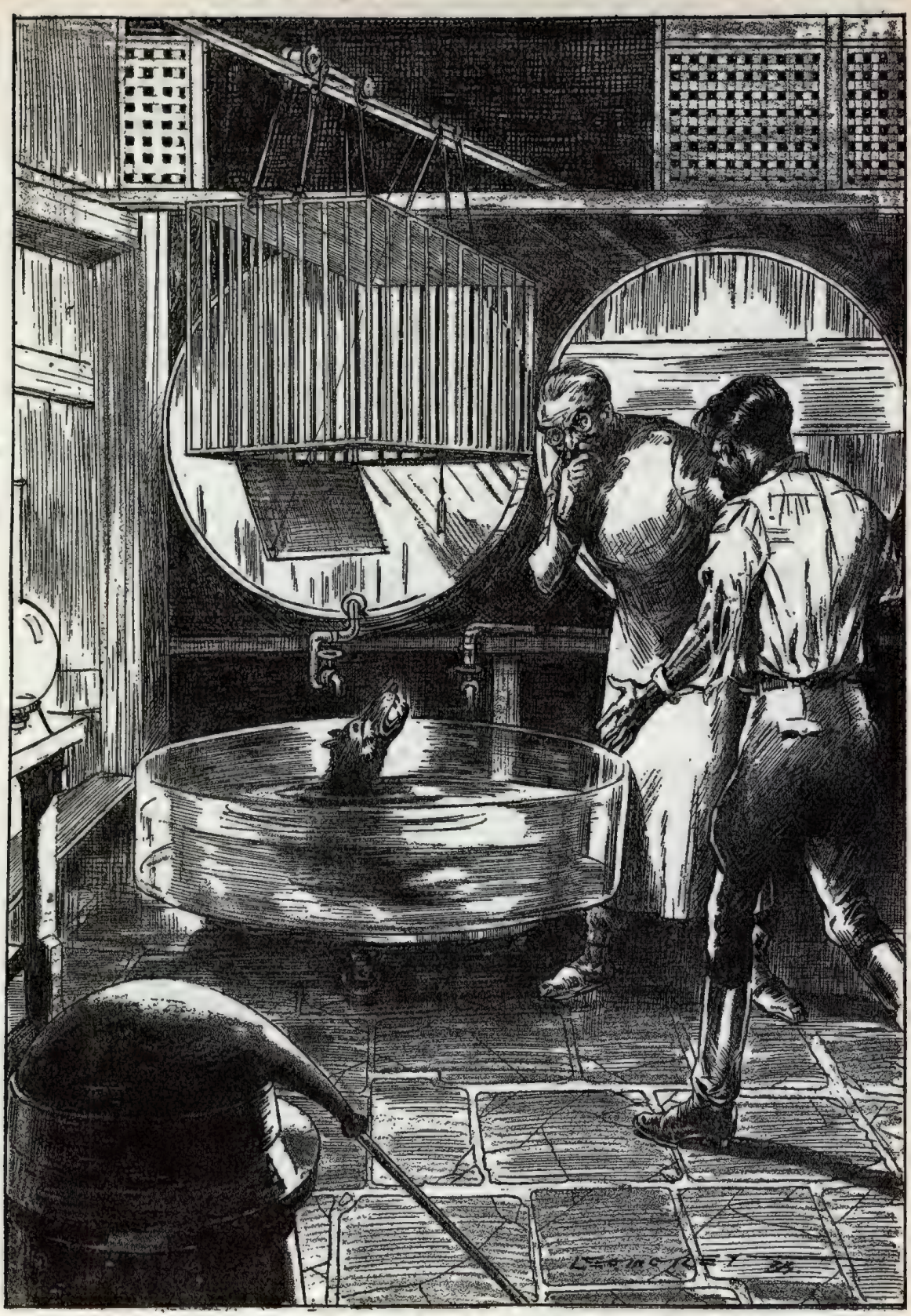
At that time he appeared to be about forty years of age, and while he did not actually say so, I gathered that he had traveled often in strange countries.

Our second contact was in Havre, where he voluntarily did me a turn which earned my deep gratitude; but three more years elapsed before this third meeting of which I now write, when we were on a ship out of Tunis for Calcutta. I was destined for Bombay, where I hoped to get a large order for the construction of a new railroad that was to run all the way through from the coast to Lucknow, up near the southern base of the Himalayas.

But although we were on the same boat, I hardly saw Robertson until we arrived at Port Said, where our vessel stopped to coal. There he was among the first ashore, almost immediately to be swallowed up and lost to sight in the human maelstrom that whirls and swirls in that wickedest of all cities.

I remember that the hot, damp stench of the quays was nauseating. From scores of vessels that were coaling there drifted great funnel-like clouds of dust that floated together and became a heavy pall hanging over the water, and apparently over the entire city, like a premature twilight. It gave one a feeling of suffocation.

The sun already had set and evening was beginning to descend upon Port Said; but even in the fading light, and through the stifling coal dust, one could



I was horror-stricken, despite the forewarning, for there, before my very eyes, without an indication of pain or discomfort, that wild dog was rapidly dissolving into nothing.

see for nearly a mile along the dirty but incessantly busy waterfront, beyond where ships were coaling, to where others were loading cargoes of cotton that had been carried across Lake Manzala from Materia—the clearing house and shipping point for the crops of the great producing delta of the mainland.

Where Fred Robertson had gone I did not know; but I noted that he departed alone and hurriedly, as though there was much to be accomplished in the seven hours that our vessel was to remain there. Truly, a man of mystery and of mysterious solitude!

But I soon forgot him in becoming the fourth member of a party about to set out on a tour of the town. Two of my companions were Englishmen, the other an agent for a South American government. A short distance from the docks we picked up a native guide who seemed to be about as trustworthy as any we were likely to find—and our strange night pilgrimage began.

WHAT I observed I would not attempt to recount here in detail. But in secret places and in the open I saw the unmistakable evidences of all the vices of the world, furtive-eyed and shifty-looking men, who eked a living by what wits they had left, slinking along the dark and narrow byways, cursing the painted and brazen-featured women of all races and colors, against whom they collided. I saw the bestial, the besotted, the mentally, morally and physically depraved of both sexes, as they pursued their human prey. Crime, it seemed to me, was the chief pastime of the dark hours for that motley community drawn from every nook and corner of the earth.

It was shortly before midnight, and after we had headed back toward our ship, that our guide led us out of one of the more prominent thoroughfares and into a narrow street that was little more than an alley, flanked on either side by squat, dingy houses that apparently long ago had been deserted by all human inhabitants.

"Opium," our guide grunted, in response to low-voiced inquiry by one of the Englishmen.

It seemed to me that it was but an instant later that a shrill scream, the scream of a woman, suddenly pierced the heavy silence of the street and brought all five of us to an abrupt halt. I don't mind admitting now that distinct chills chased each other up and down my spine as our guide, half crouching, warned us with a gesture not to move or make a sound. None of us could imagine whence the cry had come, and our native seemed to be measuring the situation and its possibilities. And I remember thinking, with considerable surprise, that he seemed to be actuated more by wisdom and experience than by fear.

We had not long to wait, however, for hardly had we taken a second breath when the weird shriek was repeated. At the same time the front door of a house near the far corner was thrust open and a woman stumbled into the street. Our guide gave us a second warning of silence, and herded us a little further into the shadows, just as a great brute of a fellow emerged from the same doorway.

The woman had fallen to her knees in the gutter, and the man was standing over her, as though about to strike or kick. It was then that we heard someone running swiftly by us and toward them, on the other side of the street. Apparently he had not seen us, nor had either of them heard him, for, just as the woman uttered another scream and the man reached for her, the runner arrived.

Never have I seen anything like it done so neatly or quickly or completely. With a terrific blow the man, whom we had heard running, drove the woman-beater up against the wall. With wild-

cat precision and quickness he had him by the throat. The fellow tried to writhe free, but in another instant he must have realized his mistake. His right wrist was in an iron grip, and slowly but surely his arm was being thrust up, up, up, and then, just as slowly but just as surely, backward and downward. Brute of a man though he was, he was no match for the one who had come to the woman's rescue. He groaned in pain; there was the sharp snap of a breaking bone; and he was thrown into a hulking heap on the sidewalk.

I felt like cheering. We all did. But just then another unexpected thing happened. This man of almost superhuman strength turned to the woman, reached down with one hand, grasped the back of her dress near the shoulders, and stood her on her feet. At the same moment her erstwhile assailant dashed down the street and out of sight.

Still clutching the woman by her dress, the man who had rescued her drew her a few feet nearer to the light, thrust up her face so that he could see it clearly; and then, with an exclamation that seemed to be utter disappointment, led her back to the open doorway and pushed her, almost roughly, into the house.

Without another glance about, he strode down the street and under the flickering glare of a gas lamp. He was tall and angular, almost to gaukiness. His shabby clothes hung loosely upon him, and he wore a reddish brown beard that was permitted to grow long and unkempt. I knew him now.

Involuntarily I shuddered. The mystery of Fred Robertson was increasing. So, also, was my respect for him. But there was something—an indefinable something—about the man that seemed to stamp him with an utter loneliness that was appalling.

* * * * *

WE had passed through the Suez Canal and were out upon the Indian Ocean before I saw him again. Apparently he had kept to his stateroom ever since that night in Port Said. But on this particular evening, long after the moon had changed from a ball of gold to a far sphere of silver, and when there were few on the deck beside myself, he came out of his voluntary exile and placed his steamer chair near mine.

"You will soon be at your destination," he said presently.

"Yes, not long now," I answered. "And you?"

"I do not know," he said, and I thought his voice was somewhat strained. Then, with a mirthless little laugh, "It is something to know where one's destination lies."

His words and his manner increased the mystery in which he lived and moved. Indeed, I think I felt a little in awe of him. Something about the man made me pity him, too, without knowing why. I remained silent because I could not think of a suitable reply.

"Do you expect to go all the way to Lucknow?" he asked, after a time.

"No," I told him, "I hope to transact all my business in Bombay, and leave there in three or four weeks."

"Ah, then you shall not, by any chance, go over the Himalayas?"

"Heaven forbid," I exclaimel. "And then, feeling that perhaps in some way I had offended, I started to apologize.

But he interrupted me. "No need of that," he said. "You are quite right. For beyond the Himalayas lies Tibet—the highest country in all the world, and the most desolate."

"You have been there?" I asked eagerly.

"Yes," he responded slowly. "Several times."

"Tell me about it," I begged.

"About Tibet?"

"About Tibet—the country—its people."

He remained silent for so long that I began to think he had forgotten the request or intended to ignore it. He was gazing past me and out across the ocean, looking out beyond the dim horizon, to India; and beyond India, to the Himalayas; and beyond the Himalayas, to Tibet—a million square miles of desolation.

Finally: "It is a strange land." He was speaking very slowly. "A land of strange people and strange things. If you are not in a hurry to retire, and will accept it from me as the truth, I will tell you the story of my first trip into Tibet—and of what has taken me back so often since. The only restriction I place upon you is that no one shall know, so long as I live."

Eagerly I assented. The night was getting cooler. I drew my chair a little nearer to his, and wrapped the steamer blanket more closely about me. And this is the strange, weird, unbelievable story that Fred Robertson related:

"I suppose" (he began) "that I was always something of a wanderer. I liked the strange places. There was every sort of a challenge in the idea of crossing the Himalayas alone. I had heard so much about the hardships and dangers to be encountered from man and beast and even from the climate, that it was just the sort of thing to appeal to me. And so, early in April, 1894, I made the start, armed with a variety of trinkets, with which to bribe and please natives, and a goodly supply of cartridges for as excellent a rifle as was made at that time. My life depended upon that rifle.

"It took me well over a month to get over the mountains, for even the passes are from sixteen thousand to nineteen thousand feet above sea level, and what are called the valleys between are from two to three miles elevation. Only once in that period did I see other human beings, and that was when, just about sunset one evening, I skirted a native village at a very safe distance.

"I lived chiefly upon bear steak, wild hares, and occasionally, birds. By the middle of June I had crossed the Lhassa Valley by a route which I believe to this day is known only to myself. I endured many hardships and once nearly froze to death. For in some of the places at great heights it is so cold that scalding water, shot into the air from boiling springs, freezes before it reaches the ground and forms miniature ice mountains around these hot springs. But even in the face of all these obstacles, and with game growing daily scarcer, I pushed forward at last, in the middle of the summer, I reached that even more tremendous, prehistoric upheaval north of the Himalayas, which is the most massive mountain range on the crust of the earth."

(He paused for a moment and I began to realize what a trivial thing it was, after all, for a man of such wanderings to remain in solitude in the midst of civilization, for a few days, or even for a few weeks. But again he continued:)

"I WAS working southward again, and it was on the twenty-eighth day of August that I began the gradual descent from one of the frozen plateaux into a valley whose opposite side, I believed, would afford a pass that would shorten my homeward journey. I can never forget the sensation I felt as I crawled cautiously out on a ledge of rock, sheer over the mountain side, to get a better view of that valley.

"Fifty feet below me, on what looked like an almost inaccessible natural platform, lay a large animal which certainly was of the tiger family, but a species that I never had seen or heard of! It was disconcerting, startling. I had encountered tigers before, and frequently

at closer range; but never had I heard of one north of the Himalayas, nor had any other man. I have always thought of it as a tiger, because in size and appearance it was more like one of the big cats than anything else; but whatever its breed, it was thousands of miles away from its own country and its own kind.

"But if the sight of that animal was a shock, imagine what my feelings were, when, following the gaze of the beast as it glared down into the valley, I beheld a cabin which I instinctively knew no native ever had built, with two out-buildings and a small but apparently well-growing garden.

"There was no explanation, then or later, of how that tiger had gotten so far beyond its natural domain; but it was easy to understand how the animal, once having journeyed, or having been transported, into the cold lands of Tibet, had come to establish its lair in that particular part of the mountains. It was living upon what it could steal from that little reservation!

"My God! if only I had killed it then. But instead I lay there, wondering what manner of man or people occupied that cabin—and when I moved, a rock went bounding downward, and like a flash the brute made for cover. I fired, but too late.

"The shot accomplished something, though, for almost on the instant it brought a man and a girl from the cabin, seeking some explanation of that strange sound. Even from that distance I could discern that they were white and undoubtedly from the same civilization to which I had been accustomed. At the risk of my life I rose to my full height on that narrow ledge, shouted to them, and began waving my hat in token of my friendship.

"They regarded me dubiously for a moment, then held a short conversation which ended with the man hurrying into the house. When he came out he carried a pair of field glasses. After gazing at me through these for a considerable time, he passed them to the girl. After she, also, had subjected me to a long-distance examination, they signalled me to make my way down to them.

"An hour later I was seated in the strangest surroundings imaginable. There, in the heart of isolated, almost uninhabited Tibet, where less than a dozen aliens ever had been before, I was in one of the most complete chemical laboratories I ever had seen. And I was talking with Ian Bjornsen—in my opinion one of the greatest alchemists the world has ever known. With us was Bjornsen's twenty-one-year-old daughter, whom he only address as Ola.

"SHE took no part in the conversation, but kept staring at me as though I was a strange creature suddenly dropped from another planet. And indeed it must have seemed so to her, for I soon learned that she was the only child of Bjornsen's marriage to a high caste native of India; that the mother had died when the daughter was two years old; and that for fifteen years she and her father had been living in that cabin, absolutely removed from all other human companionship. I pitied that child of loneliness, for I could see that much of the time she was all but forgotten by her father, in his complete immersion in his own work.

But I had little time to think of her, for Ian Bjornsen kept up an incessant conversation. Where had I been? Where was I going? How long would I stay? What was the world—the great outside world—doing?

I answered him the best I could, and then I politely asked him what he was doing secreted away from all civilization, there in the heart of Tibet.

"What have I been doing?" he re-

peated after me. "Before you go I shall tell you. Better than that, you shall see for yourself. My work is nearly completed. It has required years, and I have done it here, so that no man might steal my secrets."

As he spoke I happened to glance at Ola. She had changed completely. There was a look of terror, almost of hatred, in her eyes, and I thought she trembled. Or it might have been that she shuddered. But in a moment this strange transition left my mind, for Ian Bjornsen had risen and was leading me out of the cabin and down through the garden to the first of the two out-buildings.

The interior of this was as much of a surprise as the cabin itself had been. It was a miniature menagerie, divided off into half a dozen cages or pens, each containing some animal native to that land —all but one, and that I could not classify.

"That," said Bjornsen, in answer to my inquiry, "that is Henri, my wild dog. He is a veteran here. He has been dead three times."

I do not know what exclamation I made. I could hardly believe my ears. But of one thing I was sure, and that was that Bjornsen was crazy.

But he only turned to me and smiled. "I see that you are surprised," he said. "I do not blame you, but you heard me right. I said that Henri—this little wild dog here—has been dead three times. Did I not tell you that my work is about completed?"

My expression must have betrayed my thoughts. But Bjornsen was not offended.

"My friend," he said, grasping me by the arm, "I have discovered the chemical secret of life and death."

"Do you mean to tell me seriously that you can restore life to a body after actual death has occurred," I demanded.

"Well," said Bjornsen, "perhaps that would be claiming a little too much. But what I can say is that for years I have been working upon this single problem, and that for the last six months I have been experimenting successfully. If you were killed by a bullet from that rifle you carried, I could not bring you back to life. But maybe soon I will be able to do that. What I can do now is to disintegrate and suspend life—yes, for one or a hundred or a thousands years—and then restore that life again, with the body no older, but much better and stronger than it was before."

"I KNOW that I looked at him aghast.

"You shall see," he said. "We will take this other wild dog. I trapped him only two weeks ago and he has never yet been tried."

And while he was still speaking he grasped the handle on the front of the cage containing that dog, and for the first time I realized that not only were the pens portable, but that each was fitted with a set of wheels adaptable to a pair of tracks on the floor. He set the cage on these tracks and opened the rear door of this out-house. I saw immediately that the tracks ran to the second building, which was on a lower level, so that the tracks entered it at an elevation of about four feet.

As Bjornsen opened the door of this other building, I saw that it was another laboratory, but entirely different from that in the cabin—a sort of experimental workshop. The tracks ran to a point directly over a large vat, where there were cleats to hold the cage rigid. When he had gotten the wild dog that far, and its cage made secure, Bjornsen stopped to explain.

"I will fill this vat," he said, "with a certain chemical solution. That solution will entirely dissolve any living body within three minutes. It will preserve it that way for years. But it does not kill.

"When I have done that to your satis-

faction, I will add another chemical, which is a restorative, and the body, with renewed life, will be brought back before your eyes.

"But, before I do either, I want to satisfy you that there is no trickery about it. This vat was especially constructed for the purpose. I got it here only after the most terrific difficulty. At present, as you can see, it is water-tight."

He asked me to stoop down, and then showed me a mechanical arrangement by which the bottom of the vat could be slowly raised upward until it was on a level with the top and sides of the cage.

"That," he explained, "is to raise a restored animal level with its cage, so that it can be forced back into captivity after the experiment has been completed. Now we shall begin."

He lowered the bottom of the vat into place and examined a gauge on a near by tank, from which a pipe ran to the vat, its spigot being directly over the inner edge. He then examined another tank and gauge similarly connected up, which was in the opposite direction from the vat.

"This," he said, returning and pointing to the first spigot, "is the dissolving solution."

He turned the handle, and a stream of liquid as clear as spring water began to run into the vat. The wild dog growled and snapped in fear or rage, but Ian Bjornsen only chuckled at the animal's misery. The whole thing is terrible to think of, even now.

In five minutes the vat was a little more than half filled, and Bjornsen stopped the flow. Then he grasped the handle to the sliding door of the dog's cage.

"Watch him," he said, as he began to pull the bottom out from under the animal. "You will see body and life disappear."

A final jerk pulled the entire floor from beneath the wild dog, and with a howl of fright it splashed into the vat. I was horror-stricken, despite the forewarning, for there, before my very eyes, without an indication of pain or discomfort, that wild dog was rapidly dissolving into nothing. The liquid was slightly darkened—that was all. In three minutes there was nothing left of the beast, and I could see the entire bottom of the vat.

"Bjornsen shoved the cage out of the way and handed me a long metal bar. "See for yourself," he said. "Stir it."

"I did. I found the liquid to be of a semi-sticky consistency. There was nothing else. My friend, I was convinced. I had seen, and I had tested.

"You are satisfied?" asked Ian Bjornsen.

"I nodded. I did not intend, even for an instant, to take my eyes from that vat and the strange, terrible thing it contained.

"Then," continued Bjornsen, "we will bring the wild dog back."

HE replaced the cage over the vat and opened the faucet from the second container. The liquid from this also was transparent. He permitted about half as much of the second fluid as he had of the first to run into the vat.

"Now watch carefully," he said, stopping the flow.

I did. In two or three minutes strange jelly-like substances began to appear in various parts of the vat. They increased in size and consistency as I watched. Presently they began floating together toward the center. They were assuming form! I could discern the rough outlines of a paw, of the head, and then of a part of the body. It was weird. I could see an animal being re-formed, actually re-made, by the simple combination of two chemical compounds.

"Ian Bjornsen chuckled. "He is

coming through splendidly," he said. And even as he spoke the whole wild dog was coming to the surface before us. A vicious growl informed us that restored life was complete.

"Bjornsen touched the apparatus which raised the bottom of the tank and at the same time released the liquid to another tank into which it drained off. Slowly the healthy and rejuvenated beast was elevated to its own cage, and then the flooring was pushed in and locked there.

"'You have seen,' said Ian Bjornsen, as he started the cage on its backward journey to the other outhouse.

"I have seen," I answered, "and it surpasses witchery, the black art, and all that alchemy ever aspired to."

"I STUDIED in the best universities of Europe," Bjornsen said. "My father was a chemist and I was virtually raised in a laboratory. My wife, as I have told you, was a native of India, and she knew much of what you call the mysticism of that land. Perhaps, in a way, I combined her strange knowledge with all that my studies and experiments had taught me. But nowhere outside of Tibet can be found the herbs and mineral chemicals out of which these two liquids are made. The secret is mine, but it has not yet been fully tested."

"What do you mean?" I asked.

"I mean," said Ian Bjornsen, looking me steadily in the eyes, "that never yet has it been tried upon a human being."

I must have shown something of the sudden horror that overcame me. Some justification might be found for these experiments upon wild beasts—but upon a human being! The thought was appalling.

"Do not fear," said Bjornsen, watching me critically. "I had no intention of asking you to be the subject. But you are in a position to do me and all humanity an inestimable service. My daughter has a terrible dread of this phase of my work and will not come near this laboratory. I have pleaded with her in vain, but she will not carry out my simple instructions for me. I have absolute confidence in my discovery, and ask only that someone conduct the test; I, myself, will be the subject of it."

"No," I interrupted. "I could not do it. You must not ask it of me."

"But wait," he urged, "I have not yet yet told you all. You shall have your reward and in advance. It may save you from death many times on your journey back to civilization. What you have seen is not my only discovery, although I believe it is my greatest."

He led me outside the laboratory and to a large box filled with metal. "Can you lift that?" he asked .

I tried—and confessed that I couldn't.

"And neither could I—now," said Bjornsen. "But in a second I can, and I am a much older man than you."

From a pocket he drew a small yellow tablet. He held it in the palm of his hand so that I might see, then put it in his mouth, crunched it up and swallowed it. Almost on the instant he reached down, grasped the big box by either side and lifted it high from the ground, holding it straight out before him. Just as easily he set it down.

I tried it again. I could not budge it. Without a word he extended me one of the tablets. I did with it as I had seen him do. Almost immediately and without the slightest effort I lifted the big box to my shoulder. It had been as simple as lifting a child's toy. I was dumbfounded. I think I began to laugh like a yokel.

"These," said Ian Bjornsen, taking a handful of the yellow wafers from his pocket, "these—as many as you want of them—shall be yours if you will do me and humanity the slight service that I ask."

"And that?" I queried, knowing quite well what he wanted.

"Only that you shall turn on and off the spigots just as I shall direct," he said. "It will take only a few minutes in all. Surely, I would be the one to hesitate if I thought there was the slightest doubt or the least danger."

EVEN then I ought to have refused. But I could find no reasonable excuse. My objections, after all, were founded on prejudice and a vague fear that was born only of uncertainty. Had I not seen the wild dog dissolved and restored? Had not Ian Bjornsen conducted these experiments so often and so successfully that he was absolutely certain of his own safety? And so, not without some reluctance, I finally agreed.

"Good!" he almost shouted. "I shall begin showing you right away." And for more than an hour he carefully rehearsed me in every detail, explaining the gauges on the tanks and the exact quantity of each fluid needed.

Then we went back to the cabin for a late afternoon luncheon which Ola had prepared. There we discussed the whole matter again. I do not think Ola approved, but she said nothing. As a matter of fact, Bjornsen himself, as enthusiastic as a child, did most of the talking.

It was six o'clock that evening when, Bjornsen having given me my reward in advance as he had promised, we departed for the outer laboratory, leaving Ola in the cabin. Bjornsen then carefully refilled each tank and marked the exact line on each gauge where I should shut off the flow. Then he began to disrobe.

I imagine about half an hour had elapsed when, all instructions completed and everything ready, Ian Bjornsen climbed into the vat, sat down with his knees drawn up under his chin, and turned on the spigot allowing the dissolving fluid to run in. I shall never forget it. It was not until then that I realized that Ian Bjornsen was trying a new method. Instead of jumping into the vat after it had been properly filled with the liquid, he was having the chemical run in upon him! But it was too late for me to demur, and after all it turned out to have the same result.

As I stood there I saw all that was earthly and material of Ian Bjornsen dissolve and disappear into nothingness. In two or three minutes after complete immersion he was entirely gone. Nothing was left but a slightly discolored fluid. I was gazing into it, as though hypnotized, when Ola, from the doorway behind me, screamed.

Later I decided that she must have come to watch; but at the time I was merely frozen by the horror of her cry. It brought me upright. I think the first thing my gaze caught was the window, half a dozen feet in front of the tank. And there, crouching on the sill, ready to spring, was the great beast I had seen on the mountain ledge, hours earlier that day!

For a moment I was too terrified to move; then, as carefully as I could, I got one hand into a pocket, put one of those tablets into my mouth and swallowed it. At least it gave me more confidence. But I could see that the animal was getting ready to spring. Just as it did so, I wildly waved both arms. Taken completely by surprise, the beast balked, but too late to maintain its balance. It missed me by two feet—and dived headlong into the vat!

I had ducked behind the big receptable. I heard the awful splash, and then a roar. There was more splashing, but only for a few seconds, and it died into silence. Not yet fully comprehending what had happened, I stood upright and looked into the vat. The beast was evaporating —melting into the transparent liquid which already contained the body of Ian Bjornsen!

For a time I was stunned. Then I rushed wildly to the cabin whither Ola already had fled. To her I blurted out something of what had happened. But it was not necessary. She already had guessed. Without a word she led the way back to the laboratory.

She surveyed the interior of the building as though it was the first time she ever had been there, and indeed it may have been. I explained the uses of the two tanks. She listened attentively, then glanced into the vat that contained the two living bodies, and turned away with a convulsive shudder.

"There is but one thing to do," she said. "Go back to the cabin and get your rifle. Then we will turn on the reviving fluid. As the tiger materializes you must shoot him. It is the only way of saving my father."

I DID as directed, and, a few minutes later, crouching together at the upper end of the vat, we turned on the second faucet. I shall never forget my feelings as I stood there, rifle to my shoulder.

In a short while queer substances began to appear in the liquid. But Ola was more discerning than I. She turned on me suddenly with all the agility of a wild beast, a terrible terror in her eyes.

"The cage," she cried. "The largest cage! Quick!"

And then I, too, knew the awful thing that was happening. I rushed to the other out-building, and, more by instinct than knowledge, pushed the large vacant cage out into the laboratory.

What I saw when I re-entered, I never shall forget. Ola was cowering in a far corner. And in the vat was a living, breathing, reviving horror—half animal, half man—a beast, a tiger, with a human head—the head of Ian Bjornsen.

"Quick!" Ola shrieked again, even as the Thing began to move and lash its tail in unholy fury.

I pushed the cage over the vat and locked it fast, just as the terrible revivication was completed.

Ian Bjornsen, without doubt the greatest alchemist the world has ever known, now part man and part tiger, was looking out upon me and his daughter, not with the gaze of a human being, but through the eyes and with the instincts of a bloodthirsty beast!

Helplessly I turned to Ola. Her jaws were set. When she spoke it was through clenched teeth, and her voice was so hard that I scarcely recognized it.

"Into the cage," she said, motioning toward the Thing in the vat. And without questioning I started the mechanical contrivance which at once released the chemical and started elevating the bottom of the tank.

It required only a moment or two to get the half man, half beast into the cage, but we had figured without its human cunning. With one reach of its massive paw it tore away a pocket of my coat—and a dozen of the strange tablets I had placed there. They were swallowed at one gulp, and in another instant worse began to happen. The Thing was ripping away the bars of its cage, and it was too late for me to reach for my gun, even had I had the courage for what would have been little short of murder.

I grasped Ola by the arm, and together we fled from the building only an instant before the wild monstrosity was free.

Tremblingly we stood in the half-open door of the cabin, a cold perspiration upon our foreheads. We saw It leap through the laboratory window, stand for a few seconds gazing about, and then disappear swiftly and silently into the darkness. It was headed toward the mountains where first I had seen the beast that morning, sunning itself on an inaccessible ledge.

I could not describe the hours that followed. Ola sat or wandered about as

one stunned. Occasionally she shuddered. When I spoke to her she did not answer—did not seem to hear. The terrible silence was worse than as if she had screamed at me that I was her father's murderer. But about eleven o'clock that night she went to her own room, which adjoined the one in which I sat, and after awhile her even breathing, quite audible to me through the open doorway, indicated that she was sleeping.

I threw myself across a cot, and—I guess it was the utter exhaustion—presently I dozed off, too. But for me it was a sleep of horrible dreams. At one time I was in a mountain cave, surrounded by queer, ferocious man-beasts; at another I was swinging by a rope around my neck from a high cliff in the Himalayas. I awoke with a start, and with the feeling that many years had passed—and that I had aged beyond my time. I looked at my watch. It was ten minutes past midnight.

I listened for Ola's breathing, but could not hear a sound. When I could stand the utter silence no longer. I called to her. There was no answer. I called in a louder voice. No answer. I guess I became sort of panic-stricken. I shouted. But there was only a deadened echo through the cabin. I looked in her room. She was gone.

Not only was all her clothing gone also, but every paper that her father had left, which might have thrown light on his discoveries—perhaps might even have helped in his own rescue.

Throughout that night and for many days after, I searched the country over, but not a trace did I find, either of the girl herself or of her transformed father. At the end of a terrible week, a changed and aged man, I resumed my journey toward civilization. All that I had left as evidence of my awful adventure was an acid burn across my hand, several spots of gray in my hair, and Bjornsen's entire supply of those marvelous strength tablets.

Since then I have been going back, year after year, and I shall continue to do so, as long as I am able. It may seem strange to you, but I have the feeling that some day I shall find this Thing that was Ian Bjornsen. I shall have the strength tablets with me—and maybe I can bring him back.

As for Ola, I never cease to seek her, for somewhere, sane or crazy, she possesses the secret by which we might make her father human again.

That was the weird story told me by Fred Robertson on a mystic night on the Indian Ocean. I never saw him again. And all this was years ago.

Last month, in my club, I was idly scanning a copy of the London *Times*. Down in a corner of the third page I came upon this item:

> Scientists of the Evanson Expedition, which went into Tibet eighteen months ago and has just returned to civilization, confess themselves mystified by a strange find in one of the upper passes of the Himalayas. It consisted of two skeletons and several fragments of clothing. One of the frames was that of a man, tall and evidently red-bearded. The other was that of some strange animal unclassified by science, with a body like that of a panther or tiger, but whose skull resembled that of a human. They were clasped together as though they had died in a bitter struggle, and many of the bones of each were broken. Close by the skeletons lay a torn and weather-beaten fragment of a man's coat, in which were the faded initials "F. R."

I have no doubt that Fred Robertson is dead. The stricture of confidence that he placed upon me has been removed.

THE END

The Atom Smasher

P. Schuyler Miller's stories are always good. So much has been said lately about the dissociation of the atom, as it may be called, which is the separation of its electrons and protons, that this story is very apposite, and we will let it speak for itself.

By P. SCHUYLER MILLER

THE student huddled back into his corner of the hot, stuffy auditorium, breathing heavily from his mad scurry up the stairs. He was late. Paper No. 10 was very nearly finished.

He stared at the tall young man who was speaking, drawling softly in the way of the South. He stared at the diagrams chalked on the blackboard. Something tremendously important was happening down there. That man, only a few years older than he, had made a tool to shatter atoms!

"It's really quite simple," he was saying. Some startled, incredulous savant had hurled a question at him. "It's like a bucket conveyor. The silk belts simply pick up the charge and dump it on the spheres. The charge builds up until leakage—brush discharge—begins. With two oppositely charged spheres like this, two feet in diameter, we got a million and a half volts. We expect to make bigger ones—to give ten million, twenty million, whatever we need. The only thing that limits you is the size of your spheres. We hope to be able to get at the atomic nucleus that way."

Simple! There in the sultry lecture-room the student crouched in his seat, staring into the hot dark. He knew nothing of Paper No. 11, or the supplementary papers that followed. He was still sitting there when everyone had left. He was dreaming—great dreams.

* * * * *

The tall old man threw a long leg over the side of his autogyro and slid to the ground. He steadied himself against its wing, stood there looking out over his little mountain valley. The chill wind from the melting glaciers whipped his straggling hair and sparse beard, and brought a mist of tears to his piercing blue eyes. His lean, bronzed face seemed to twitch with some deep-seated emotion, as the shadow of the idly spinning rotor-blades swept over it, slower, slower, stopping. His face was grim and haggard in the shadow.

Down from the sheer, green wall of the glacier toppled a pillar of foam, wreathed with shifting, ghostly rainbows, phantoms of the drifting mist. Beside it, squat and gray, huddled the power-house, with its tall steel towers on the ledge behind it. Before it, at its foot, a thread of crystal leapt from the churning froth of the whirlpool and danced out over the valley floor, out into the sunny meadow, then back into the shadow of the cliffs that narrowed and hemmed it in, and sent it pent and raging down the gorge to the sea.

At the foot of the slope, beside the little stream, two ebon towers rose from terraced bases, five hundred feet into the

Alaskan sunlight. Sleek and glossy the two huge insulators loomed at the center of the little upland valley, topping the low cliffs, thrusting high their mighty twin spheres of burnished metal, linked by a crystal shaft. Dwarfed by the stature of the towers and spheres, two big motors pressed against the bases, like frightened chicks huddled at the feet of some human giant. Like a flat gray toad, a little, rude laboratory crouched under the lee of the cliffs, facing the aurora. And, above and beyond, the mountains loomed along the horizon, like peering deities, staring down into the snowy bowl as at a jewel of silver and emerald.

The old man turned from the great thing in the valley and fumbled in the cockpit of his battered plane. It was a queer thing he drew out, a little, ugly cube of dull metal—lead—with a little round stoppered aperture in its side. He seemed very old and tired as he stood there beside the hut, pressing his little box against his heart. His life was in that box.

In the squat stone hut it was hot and dark. One small bulb was lighted over his instrument-board, his master controls. His delicate, withered fingers danced over the dials and keys, tugging at connections, tapping at tubes, searching for the flaw that must not exist.

It did not. Taking up his leaden box, he went out again into the night. The shadow of the western range was creeping about the base of the two great towers, but the mighty spheres that crowned them burned bravely in the rays of the sinking summer sun. Under the cliffs it was dark, and there was a stir of stealthy life among the fallen boulders. The little, timid creatures of the night were darting forth. They had no fear of the tall old man, or of his strange towers.

Slowly and painfully the old man crept up the long ladder. He climbed out on the floor of the big room, stood for a moment at the edge of the shaft, catching his breath. Deep within him, the dull, brutal gnawing had started again, but he ignored it, beat it back as he had for so many months, stalked across the metal floor to the steel block at the end of the crystal tube. Here were his instruments, cunningly shielded. Here were controls, duplicates of those in the stone hut. Here a quarter of a billion volts of hurtling energy would smash into the trembling atoms of a gram of radium, would free the fires that would free the world!

He fumbled with the heavy door of the vault, pulled it open. From his cube of lead he tumbled out a tiny capsule, a little sealed tube of quartz, glowing faintly green in the half-dark. He set it carefully in its little clip at the focus of the electron stream, stood there staring at it, remembering. His life was in that little crystal capsule, and the life of Robert Van de Graf, who eighty years before had stood in a little college lecture-room and startled the world of physics with a tool to smash the atom. Eighty years—years of growing poverty, while the malignant rays from his tubes ate at his vitals, while the world forgot. For Robert Van de Graf had failed, and he—he the nameless student of that long-gone day—would vindicate his memory! The old man stumbled toward the hatch that opened the way down into the blackness.

Far above the snowy bowl of the mountains a lone aviator caught the last light of the sinking sun on his glistening wings. He stared down through the growing dark at the wilderness beneath—rolling snow-dunes and knife-edged scimitars of ice, black, jutting snags of rock, treacherous crevasses—sheer hell to the airman who should fall into its clutches. There was a tiny fleck of soft, cold green in it, there in the shadow of the western peaks. He peered down through his night-glasses and swooped low over the valley.

The reflected sunlight from the eastern peaks cast a pale white lustre over the little valley, the old man's refuge. There was a waterfall, a stream, a queer-shaped thing beside it. There was an old-type autogyro, and a tiny human form toiling up the long slope to a flat, gray hut. It disappeared, and from the valley rose a dull, soft mutter of motors, rising to a steady drone, audible even above the rush of the wind past the sleek curves of the circling plane.

On and on droned the motors of the old man, building up the charge. Now two soft purple disks were taking form against the dark oval of the shadowed valley, furry with electric leakage. They cast a dim glow over the little valley, showing two vague shafts rising into the night, two stepped squares of glossy black, the shifting glimmer of the stream. Hovering like a great, noiseless eagle above the snows, the aviator circled and watched and waited.

The glow from the distant peaks faded. The valley was dark save for the glow of the great spheres and the spot of dull yellow that marked the door of the stone hut. Then of a sudden the two disks winked out and between them sprang a thin shaft of vivid, violet flame, spreading into a fan of flickering electric fires, then gathering suddenly into a dazzling blue-white ball where the second disc had been. On its heels came the crash of shattered glass and tearing metal, and a blinding glare of white flame burst from the door of the little hut, driving before it a blinded, stumbling thing that staggered off into the dark. A second burst of flame revealed the old man, his ancient hands groping in eternal blackness, tottering down the hill to the towering shaft of the mighty machine. Then only flickering crimson shadows scuttled among the rocks around the burning hut.

Blind, agonized, the gaunt old man dragged his tortured body up the last endless yards of ladder, beside the softly whirring silken belt, glimmering ever so faintly with a soft light that he could never see. He toppled forward on the steel floor of the great room within the sphere and began to inch his way over its cold, harsh surface toward the looming casque of steel. His hands came up, fumbled among the heavy cables, seized and tore one loose with a sputter of fat, hot sparks that shook his frail frame cruelly. He clutched at the disc before the great steel door, the disc that had failed to slip aside at his bidding, so that a quarter of a billion volts crashed through writhing conduits into the wrecked control-board of the little stone laboratory. Stiffly it slid down, revealing the glowing mite of radium within. Sick and faint, the old man sank face down upon the cold steel floor, beside the open vault. Far below the motors droned their song, piling up the charge, up and up and up. . . .

Something, some voice from nowhere, whispered to the circling flyer. His stubby craft split the starry heavens, zooming up into the frosty night, up and up and up, until the valley was a speck against the starlit snows, then the wraith of a memory, and then was gone.

Out of the heart of the snows hurtled a pillar of seething flame, star-white, blinding, leaping out into Space! Out of the little upland valley burst an awful, beating wave of thunderous sound, seizing the little fleeing plane and throwing it mile on shrieking mile into the gaping skies, until its pilot gasped in the thinning air and with the fierce strength of speeding life threw his controls into a screaming dive toward the burning snows!

That sight seared itself forever into his memory. The bowl of the circling ranges was alive with leaping, cavorting shadows, capering in fiendish glee about the flaming shaft that hurled itself three thousand feet into the night! Out of the

heavens came the wild winds of the world, battling, clashing, tearing the air to tattered shreds and flinging them into Space! Out of the holocaust at the valley's heart stabbed the cruel rays of chaos, battering at molecule and atom, crushing them, shattering them, bursting their crowded nuclei and freeing raw, new-born hydrogen that in an instant flamed into fierce crimson fire, burning in great leaping tongues from every crag and every ice-spire of all that great hollow in the hills, sending huge lurid plumes and streamers of destruction up from the flaming peaks, freeing such a hell as earth had never known! Out of the darkening heavens rushed the curtains of the aurora, cackling wildly with unearthly glee, and out of the splitting skies burst the mutter and mad laughter of the storm.

A week later, native hunters found a raving human beast who had seen Judgment. In a month they returned to the outposts of the white men, telling of a land of burning mountains where the old gods battled and the rivers blazed. Six months, and out of the south came an army of seekers for the actual truth.

The peaks no longer burned. They climbed their outer flanks, stood on their crumbling summits, riddled by the gutting rays. Far away, at the heart of a desert waste of dead, gray dust, a pool of white fire still blazed in the night. Day after day, week after week, they were smothered by the ash of atoms, that rose in great dense clouds about them. And as they crept nearer and ever nearer, the glow of the flaming pool waned and died, until, when at last they stood at the lip of the little valley that had been, only the dull red glow of heaving molten rock remained for them to see.

They never dared to try what he had tried. They never even knew his name. But a great gateway had been cut through the mountains in that desolate land, and on either side of its broad approach towers an ebon shaft, topped with a golden ball. Men stare at them, and look out across the gray domain of death, and they shudder and turn away as they remember the man who smashed the atom.

THE END.

TERROR OUT OF SPACE

We are glad to be able to announce to our readers that in our next number we will publish the first installment of a serial whose title we give above. This story is worthy of appreciation, apart from its merit, by the fact that it is from the pen of an English author, J. M. Walsh, of London, and for that reason will have a special interest, as showing how the AMAZING STORIES type of fiction is treated by an English literateur.

Our Discussions columns have acquired a special atmosphere within the last year, from the many letters from readers in distant countries, all of them of a most appreciative type. AMAZING STORIES certainly has friends in many lands.

We are sure that Mr. Walsh's story will win a warm welcome from American readers, as well as with our friends across the ocean.

DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

Williamson's Story "Stone from the Green Star" Highly Commended—Back Numbers of A. S. for Sale

Editor, AMAZING STORIES:

I have read A. S. for many years but there isn't one story that can come within 200 light years of Williamson's "Stone From the Green Star." I don't want to take up too much of the Discussions' valuable space, so I will close this letter by stating that I have back numbers of AMAZING STORIES and other Scientifiction mags., which I will sell to any reader for the cover price of the mag.

Edward Camille,
R. F. D. No. 3,
Erie, Pa.

(Jack Williamson has received many compliments for his story "The Stone from the Green Star." We are publishing this letter with pleasure as back numbers are in constant demand.—EDITOR.)

A Very Encouraging Letter for the Editor and Staff of AMAZING STORIES

Editor, AMAZING STORIES:

I am sending this letter to you for one reason, just to express my feelings of joy at the sight of the new cover.

It is hard to say it, but in my opinion AMAZING STORIES was on the downward slide. Now mind you I said, "was on the downward slide." I am sure everybody will agree with me that now AMAZING STORIES has hitched its wagon to a star so far off that its light will never be seen on earth.

The combining of August and September issues is an excellent idea.

Before closing this letter I am going to have my say on the Smith and Campbell controversy. Everyone must admit that by sheer imagination Campbell overshadows Smith, though I admit that Smith has Campbell beaten on the novelty and the originality of his ideas.

The three stories that Smith wrote, "The Skylark of Space," "Skylark Three," and "Spacehounds of the IPC," are to my opinion excellent *plus* stories. All stories written by Campbell can never be placed in a section lower than excellent, and he has written many. "The Invaders from the Infinite," is the best story given in AMAZING STORIES.

It surpasses every story you have ever printed no matter what story you compare it with.

As an up-and-coming writer, Williamson is an exceptionally good author. AMAZING STORIES has the best bunch of authors writing of any other mag. of that sort on the market.

Here's hoping you reach that ultimate goal,

Raymond Mariella,
5873 Woodcrest Ave.,
Philadelphia, Pa.

(Your wish that we should reach the ultimate goal, implies that we still have part of the course, on which we are running, ahead of us. No one can expect to be perfect so it is not too much to say that there will always be a space between us and the goal of perfection. Referring to your last paragraph, we are very proud of our "bunch" of authors, as you picturesquely term them.—EDITOR.)

An Amusing Letter Leading to Comments on Our Stories

Editor, AMAZING STORIES:

I closed the heavy door upon the overwhelming crowd surrounding my many angled space-ship, the Mercury-X. I had but five minutes more in which to make final arrangements and check-ups of the control and engine room. This time passed quickly and my hand paused on the lever which was to start my ship and me to Mars, and then I slowly pulled it down. I lost consciousness . . . When I regained my senses I rushed to the frontal viewplate and to my horror I saw the earth getting larger with each passing second. I knew that the gravity of earth was dragging my ship out of space. I put on my space-suit, first attaching my parachute to the back of the suit. I opened the airlock and then leaped out into space, as far away from the ship as I could get. I experienced the most frightful sensations as I made hundreds of somersaults before I saw below me many clouds. I knew what would happen if I did not pull the release-cord in time; so the minute the clouds were up to my waist, I pulled the release-cord (or rip-cord) and it "tore" open. Minutes passed and the air in the helmet began to get stale and I took it off and strapped it to my belt. The minutes turned into hours and I fell asleep . . . When I awoke it was fine to feel *terra firma* under my feet. I felt pangs of thirst and hunger and after undonning the rest of my space-suit I unstrapped the emergency food kit from the suit. After eating I took note of my surroundings for the first time. A casual glance quickly assured me that I was in "the back yard" of the Teck Pub. building and as I wished to tell the

Editor of AMAZING STORIES something, I went in, introduced myself, and after a lot of this and that I finally reached the point which I wished to reach, so:

"You know, Prof. Sloane, it seems to me that AMAZING STORIES has gone from "bottom" to "top" and then down to "bottom" again; but the August issue pointed out the fact to me, that AMAZING STORIES is again going up. (How about it, Readers?)

It seems to me that the stories follow in this order:

1. The Essence of Life—truly an impressive science fiction tale;

2. The Meteor-Men of Plaa—a strange plot, splendidly woven into an interesting story;

3. The Silicon Empire—has very good literary value;

4. Across the Ages—a very good story with a weird ending;

5. Adrift on a Meteor—an amazing story well told;

6. Children of the Great Magma—did the author get this idea during an expedition, of which he was a member, to the South Pole?

7. The Pellucid Horror—a good biological, mystery tale;

8. Head Hunters Fooled and Foiled—very amusing story, but does not belong in "our" magazinze.

As long as I have been reading A. S. I consider the following authors my favorites (I am counting only those who have written 3 or more stories) :—E. E. Emith, A. Merritt, J. W. Campbell, Jr., Bob Olsen, Ed Earl Repp, P. S. Miller, Neil R. Jones, W. E. Sanders, and H. Vincent.

Well, it's getting late and I have to report back to the field, so I'll be leaving now; but I hope to return some day.

Nathan Spiegel,
2626 N. Stanley St.,
Philadelphia, Pa.

(We have quite enjoyed your interplanetary effusion. We fail to agree with you when you say that AMAZING STORIES has ever gone down to the bottom. Your criticisms of the stories are quite valuable and we are anxious to get the opinions of our readers stated as specifically as you do it. You have made a very good selection of authors and we could easily add one or two to the list which, we are sure, would meet with your approval.—EDITOR.)

A New Member of the ISA Writes About His First Attendance at a Meeting

Editor, AMAZING STORIES:

I have joined the ISA and I attended my first meeting the other night. It was a wow. My advice to anyone interested in science or Science Fiction, that lies in the east-bay region, is to join at once while dues are reasonable. Clifton Amsbury's letter in the Dec. 1932 Discussion columns gives dues, particulars, etc.

This letter was primarily intended to congratulate you on the wonderful Aug.-Sept. issue it was by far the best for 1933. The Editorial was splendid and so were all the rest of the stories except "Head Hunters Fooled and Foiled." It seems, to all appearances, that Paul Drennen is trying to be a second Hyatt Verrill; this attempt should be discouraged.

I have quite a few back issues; if anyone is interested in them please write and I will do my best to supply the issues you need.

I am glad you gave Morey a cover; it is about time.

Your mag. as a whole is excellent; keep up the good work.

Fred Anger,
3161 Eton Ave,
Berkeley, Calif.

(Your letter will certainly gratify the society which you allude to. Perhaps if it wasn't three thousand miles away from us, we might apply for membership. We agree with you that it was an excellent move to have Morey do some covers on the basis of illustrating a story directly.—EDITOR.)

The Reprinting of the Skylark Stories Asked For—A Letter from a Young Reader

Editor, AMAZING STORIES:

I have been reading your "mag" (I mean "our") for three years now and I find I am much interested. Your stories are based on good scientific facts and theories. Some of your stories have been poor, but the majority are good.

As for the reprint of "The Skylark of Space" and its sequel I am for it and I hope you will have a sequel for "Skylark Three" also.

The new covers are good, but why don't you show the planets and their satellites on the cover? I am sure more people would take notice of it. I think the best story that you have printed yet is "The Stone from the Green Star." Couldn't you get Jack Williamson to write a sequel to it? "The Intelligence Gigantic" has held me spellbound. I have just finished the last part. I think the readers who commented on the "Spark Plug" error should know better and that it was only a misprint. Otherwise the "World of the Living Dead" was very interesting. The last Quarterly was well written. "Mother World" was the best followed by "Celestial Pioneers." Here are some of the best stories I have read in your magazine:

"Universe Wreckers," "Piracy Preferred," "Across the Void," "The Jameson Satellite," "Awlo of Ulm," "The Light from Infinity," "Politics," "North of Matto Grosso," "The Stone from the Green Star," "World of the Living Dead" and "Intelligence Gigantic."

As for Jack Williamson's "Stone from the Green Star" it was so fascinating that I read

it seventeen times and I haven't stopped yet. His theory of old age is good, but if you will listen to a boy of fifteen, here is mine. As the human body is growing, the cells of the body are changing for new cells. After a certain length of time the cells have been completely renewed. As a man grows older this change takes place more slowly. I think it is caused by an action of the mind or a chemical takes some of the life out of the cells. When a man dies of old age his cells have stopped changing, thus the cause of old age.

Well here is to luck! May AMAZING STORIES become bigger and better.

Jack DePangher,
Sardis, B. C., Canada.

(We anticipate having the "Skylark" stories, which have interested so many of our readers, reprinted in our columns at a very early day and we are sure you will enjoy them. We thank you for your kind words about so many of our stories and we can assure you that we always particularly enjoy letters from our younger readers.—EDITOR.)

The Fish on the July Cover—The Sub-Title Question—An Amusing Letter from a Constant Reader

Editor, AMAZING STORIES:

It has been some years since I last wrote, and I had the pleasure of seeing that letter appear in print. Here's again, with a couple of flowers and a little garlic.

Since my taste in stories is more or less omnivorous, I have found little to complain of in our pages, for to my mind all the stories have had something to offer. During the last few months I have been delighted with the covers, for there is something about them aside from eye-appeal, which actually suggests things scientific rather than fiction which is merely unusual. Just one thing though. I have, of course, no knowledge of what organisms may be found in space, and I assume that the July cover indicated space, but that cover leaves me a bit in doubt. What is a fish doing out there?—at least it bears all the earmarks of a fish ("earmarks," did you say?) Anyhow I think it was a swell cover already, without the aforementioned fish-like being.

However, that's minor. Most of all, I want to question the need of so many subtitles throughout the stories. I have been reading the Discussions columns, as usual, to see whether other readers have the same complaint that I have, but maybe they're all waiting to see what somebody else will say—as I have been. Hence, like Saint George and the Beanstalk (maybe that's mixed—it sounds it) I take it up myself.

To me, those too-abundant sub-titles are spoiling an otherwise ideal makeup. The print is easy to read and the columns are easy on the eyes, but I can't see any particular reason for those sub-titles. Along with thousands of others, I am interested in the progress of the story from line to line, and when a sub-title breaks in and gives the thing away, my suspense is ruined and I feel injured. Are they necessary? I wonder if other readers feel the same way.

I have a point to make here. Time was when my associates kidded me stiff about what they considered my odd choice of reading matter, because ever since the first 1926 number science fiction has been my favorite literature. Now I lean back in triumph and see them going to movies based on science fiction, and see them reading other older magazines which now include my type of stories; I see more and more magazines going in for the same thing, and I stand (or lean) vindicated. It's a beautiful thought.

Long life and continued success to AMAZING STORIES. Listen, if you leave off those extra sub-titles I promise even to be content with our space-fish.

Gerald H. Adams,
Wiley College,
Marshall, Texas.

(The artist who drew the cover with the fish on it is of a very highly imaginative cast, and we left the treatment of the cover entirely in his hands. Sub-titles are going in no longer —many readers objected to them and naturally we yield to their desires. By omitting them we certainly please many. The point you make in the conclusion of your letter was very interesting and you put AMAZING STORIES in quite a proud position as the originator of periodical science fiction stories.—EDITOR.)

A Letter from Canada

Editor, AMAZING STORIES:

After years of intellectual starvation you can easily imagine the thrill of surprised delight with which I greeted the reappearance of AMAZING STORIES on Canadian news-stands, and the avidity with which I perused the first copy. Our magazine has shrunk in area, but not in cubical contents, nor in excellence. More power to your good right arm!

It is a long time since I contributed to AMAZING STORIES, but the magazine has always held first place in my affections, not only because it is the only publication to satisfy my love for scientific fiction, but also because from you I received my first acceptance slip that set my feet on the rocky road of authorship.

Cyril G. Wates,
P. O. Box 192,
Edmonton, Alberta, Canada.

(We have long felt that owing to existing governmental regulations, AMAZING STORIES was not being read in Canada to any consider-

able extent. It is now printed in Canada and we hope that our friends across the border will enjoy it as much as it is appreciated in this country and we shall hope for an increasing circulation across the line.—EDITOR.)

An Excellent Letter from Across the Pacific—Well-Thought-Out Criticisms

Editor, AMAZING STORIES:

I am one of those readers who read "A.S." regularly, and write to Discussions only once in six months or so. During the intervening period I follow up readers' opinions and verbal battles, store up rage, satire and other emotions and explosives, and let off the lot in a heap. In this letter I intend to blow up properly, to lift the roof in fact. Having just finished the November and December "Discussions," I'm boiling to the safety valve, and here's where I let off the surplus steam. If this letter is ever printed it will probably be considerably abridged because of its length, but that won't deter me from giving a comprehensive review of all that I like and dislike in the last two month's letters.

First of all, a rather minor detonation, but one that I refuse to let pass. Mr. Francis Knight compares Dean Swift and Stanton Coblentz. There is no similarity between the two except that their methods of expression are the same, that is, both deal in satire. As a student of English literature I must protest against any comparison. Dean Swift was a beast, a low, foul-minded hound, despite his holy robes. There are episodes in "Gulliver's Travels" that no clean-minded man can peruse with approval. These he introduced to show the general degradation and futility of the human race; all he did was to prove himself a man with a fine, but vicious and warped intellect. This satire starts well, but declines swiftly and soon descends into a series of filth-wallows that can almost be termed ravings. On the other hand, Mr. Coblentz is essentially a clean writer. His satire is barbed, undoubtedly, but it is not vicious. It strikes home, but it does not leave a gaping, festering wound behind it. He is a kindly dealer of blows. "Nuff said." Honor is satisfied.

A scream of horror bursts from my quivering lips. I look, regard, read, peruse: "'The Lemurian Documents,' I hope will continue for a long time to come," said Mr. Jack Darrow. How could you hope such a thing? Was anything ever so ghastly as that series? I don't doubt that Mr. Burtt has a sense of humor, but let me say that he does not know how to set his jokes down on paper, much less present them in such a manner that anyone else can see the point and be amused. Everytime I came to an ostensibly funny passage, I felt inclined to tear the yarn out of the magazine. Did anyone ever know of such an irritating fool as the High Priest in the "Cloak of the Sacred Feathers?" I suppose that story was meant to be a scientific version of the "Argonauts." The only vestige of the original was a variation of the name "Argo." If Mr. Burtt had not attempted to be funny his stories might have been almost fifth rate. Thank heaven the series is over. The composition was about equivalent to that of my young cousin, aged 12.

Here, we come to the burning question of the age, Dr. Smith's slang. In other letters I have barely touched on the question, but I have something definite to say now.

First of all, the slang in Dr. Smith's yarns is practically restricted to one person in each. In the "Skylark" tales that person is Seaton, with a few unimportant additions from Dunark, which can be easily explained. Now, consider Seaton's character. Wild, impetuous, stormy, unrestrained in any way. I think that describes him. Now can anyone say that his slang is out of keeping with his character? I affirm that in the cases of both Seaton and Stevens (of "Spacehounds") the introduction of slang represents, not an offence against the canons of literature, but a remarkably clever piece of character drawing. Would either Seaton or Stevens be complete without slang? Emphatically they would not. Their "outrageous" language is as much a part of themselves as the paper is of a magazine. Just to support my contention, that the slang is pure characterization and not an invariable constant of Dr. Smith's pen, I cite the case of Martin Crane, who, staid and restrained, uses scarcely a word unfit for even Miss Olive Robb's ears in the course of the two novels. That is part of Crane's character. Restraint is just as much a part of the pen-sketch of Crane as freedom of speech is of Seaton.

Secondly, the main motif of Dr. Smith's stories is speed. Speed, speed, speed, fast and furious, following on in an unbroken series of events. And at the same time he must stop occasionally for a few hundred words of dialogue or science. With a style such as his, depending, one might say, almost entirely on his capacity for speedy action, even such a small break as a few hundred words represents, must be registered as a defect. Dr. Smith is eternally confronted with the problem of tiding over these "Dead areas," for, as he himself has said, consistency is one of his primary aims. The obvious solution is to use dialogue that slips easily off the tongue. Unless a man is a lyric poet, the effort of doing so for a long time would be exhausting, and the final results would probably show signs of laborious, sweated effort. What better solution is there than to introduce periodical doses of slang? Slang comes into being because of the manner in which it slips off the tongue—it is principally because of the ease in articulation that colloquialisms "catch on." It is ob-

vious, then, that Seaton's free speech fills the bill quite well. It serves a purpose. It tides over the "dead areas." Can there be any fuller justification for its inclusion?

So far, Dr. Smith's fair opponent and I have travelled on tracks that are far apart. But there is a limit to difference of opinion, and here is the point where we come together, and our tastes unite. I can do no better than quote Miss Robb herself: "In the name of sanity, what would the world think of the works of Merritt, Wells, Verne and others of the exalted, had their fantasies of the future been deluged with the current slang of gangster and Wild West fiction? . . . Multiply Dr. Smith, by the unknown quantity, x, and what is the logical inference? . . . Slang is becoming more prevalent every year, due, *unter alia*, to the subtle propaganda of the printed word."

Emphatically, I agree with Miss Robb. When every little tinpot author conceives it his bounden duty to dig up a store of slang and hurl it at our heads, the bounds are being overstepped. To take an example, Harl Vincent had lately taken to the practice of endowing his he-men with a liberal quantity of useless and unwanted words that do not have the effect of Smith's more judicious and sensible selection. In fact, Harl Vincent has undoubtedly become almost coarse in his dialogue. The conversations jar. His stories are placid and unruffled compared with Dr. Smith's lightning tales, and he has no need of slang. And anything that is useless in literature cannot be tolerated by the discriminating reader.

C'est ça! Let's move on to other things. I am beginning to think in terms of racy dialogue, all complete with Miss Robb's pet aversion: "Cuddlepup," likewise the famous "red spiders," "blinding flash," etc., and "sweet spirits of niter!" Yes, let's move on.

All right, Sol Japka, of the November issue. I have a little cauldron of boiling oil to pour down your neck. "Is it humanly possible," you ask, "for the authors to get it into their heads that in the future war will probably be abolished?"

Will it? Now think again. What are your grounds for such a statement? Principally the two moth-eaten ones, I suppose. That humanity will become more humane, or that war will be too terrible to continue. Yeah?

For humanity to change its nature and learn to love its brother man will require thousands upon thousands of years. The change will require a complete mutation in the evolution of psychology, and those things don't happen in years, or even in centuries. That war will be too terrible for nations to dare to go to war? It may be so, but I think not. The chief horror of war is not the numbers killed, but the ghastly condition of the wounded. In the future war will be a process of absolute extermination. There will be only the quick and the dead. There will be no intermediate class of ruined wretches, filling the world with horror at their condition. Death will come quickly. It will either kill or spare. Attacks will be too powerful to merely wound. Combatants will have to either escape or die instantly. The result will be, not horror, but rage, blind rage and a sense of revenge. Human nature will cry, not for peace, but for war. Let our authors write what they like about war.

Later, in Mr. Japka's letter, we find that he objects to omnipotent heroes. I should think that Mr. Japka never reads fiction of any kind, scientific or otherwise; if he did he would still find the omnipotent heroes. Does he ever read John Buchan, Talbot Mundy, A. G. Hales, Roy Bridges, Rider Haggard, Marjorie Bowen, Rafael Sabatini, Jeffery Harnol, Baroness Orczy, Hugh Walpole, and so on? If he did he would still find the abhorred hero, and those authors are selected from the world's finest. I will admit that John Galsworthy gets fine effects by dispensing with all conventional characters. But can one imagine his style adapted to science fiction? No.

Again, I say, Mr. Japka, leave the authors alone. Eighty percent of them worry along quite well.

Three cheers for Mr. John Leiter, in the December issue. His suggestion that there should be another competition is all to the good and the Editor's objection is feeble. "Overstocked," he screams. We of the public murmer, "Ah! overstocked!" Then we look through the magazine. If he is "overstocked," why does he print this unmentionable piece of idiocy?" we ask. "Surely he can find something amongst his overflowing files that would be more acceptable." Well, it appears that he can't. And the best way to get something better is to have a competition and let the unheard of geniuses show themselves, as they certainly would. Harl Vincent, Clare Winger Harris, and other fine authors first sprang into prominence per medium of a competition. P. Schuyler Miller's first published yarn was the winner of a competition in another magazine. Why not have the competition and get some really good stuff? Have it exclusively for the purpose of bringing out new talent, and debar all science fiction authors who have had more than one tale published. How about it?

Now, just before I sign off, permit me to emit one long howl of dire agony. If I want to get AMAZING STORIES Quarterly I will have to pay 5/6, equivalent to one dollar, thirty-two cents! Worse—I can't get it even at that price! Your Australian agent refuses to import it because the price is prohibitive! What am I to do? Subscribe, I suppose. Oh, very well then You'll get the subscription a few weeks after you get this. It will take me until then to rake up the necessary cash to take care of the amount.

That's all. (Isn't it enough?)

George R. Turner,
67 Highbury Grove,
Prahran, S 1,
Melbourne, Victoria, Australia.

(AMAZING STORIES has a number of readers in the Antipodes and we are glad to receive even such a letter as this from that distant region. Your letter is not a bit too long and we shall be very glad to get a new subscriber about 180° of longitude away from us.—EDITOR.)

Notes on "Radicalite"—An Intentional Error in a Story—Mr. Campbell's Views—A Good Word for Discussions

Editor, AMAZING STORIES:

With a good cigar to my right, a quart of "Haig and Haig" to my left (purchased in Panama City!), and cherished mental recollections of those "gallant warriors" Dr. Smith and Mr. Campbell, I take my pen in hand, as did the writers of olden times, to indite a letter in reply to that of my good friend and critics, Mr. Walter X. Osborn, of Gila Bend, Arizona.

To begin with, I wish to tender my humblest apologies for the tone employed in my previous contribution to the columns of "Discussions." Communications of this nature between readers and contributors to AMAZING STORIES should show a kindly spirit, especially to constructive criticism; I fear I showed a sad lack of such sentiment at that time.

To get down to brass tacks, I'll say that the date of publication of Smith's "College Chemistry" was 1929, a trifle out of date, to be sure. However, as the action in "Radicalite" was laid in 1921, I don't believe this makes very much difference, notwithstanding Clifton Amsbury's remark to the effect that "by the time anything gets into the textbooks it's so out of date, it might as well not be put in."

Another "bull," which Mr. Osborn seems to have missed completely, was one I made deliberately for the sake of its story possibilities, and which my friend and one time roommate at M. I. T., John W. Campbell, Jr., subsequently pointed out to me in a letter. I will quote Mr. Campbell:

"We will begin by attempting to step on the main use suggested for radicalite, your artificial metal from ammonia. You suggested it as a catalyst for sulphuric acid. As for using radicalite for that purpose, consider the properties it would have. It would be a light, extremely soft metal with a slightly reddish cast to its metallic luster. *And it would be extremely active!* It would be a lot like lithium and sodium. Can you imagine a lump of metallic sodium inside a sulphuric acid reaction chamber, and its probable life? Platinum is used, because it's inactive. The vats are lined with lead because lead sulphate is insoluble and forms a tough film like Aluminum Oxid (Al_2O_3). Ferric and Vanadic Oxids stand up simply because they've already done all the reacting they're really capable of. Think how active the NH_4 radical is—" In extenuation of my apparent slip, however, writers of verses are wont to indulge in "poetic license," and while the cases are not exactly parallel, still, I consider that authors of scientific fiction should be allowed some latitude in the accuracy of their predictions, due to the very nature of their work.

To F. W. Merrill, of Fort Wayne, Indiana, I wish to express my appreciation for his very courteously worded correction of the grievous "error of fact" that he mentions. Having been an amateur student of astronomy for a number of years, that I could get the locations and the relative sizes of the refractors at the Lick and Yerkes Observatories mixed up speaks ill for my powers of memory!

Speaking of John W. Campbell, Jr., his stories have been all too infrequent of late in the columns of A. S. and where is Dr. Smith? Has he finally sunk into that oblivion from which some authors seem destined, never more to rise? Will we hear no more the brilliant "wisecracks" of the inimitable Dr. Seaton, in his daily converse with his friend Crane and his lovely, fiery-tressed wife, Dorothy? Or has he but momentarily retreated into the shell thrown around him by his busy, everyday work, and will I once again be able to enjoy the controversial epistles of these "gallant warriors, girding up their loins to break a lance in knightly joust" within the columns of "Discussions"? May they dip their pens in the ink of genius and give us many more!

And, also, if you do not republish "The Skylark of Space," I shall most certainly be tempted to steal an Army bombing plane and rack of bombs, fly up to New York, and wipe out the building at 222 West 39th Street with all its contents! A more excellent example of science fiction was never written.

Before closing, I'd like to express my appreciation of the contents of the July issue. Just a list of the authors' names is sufficient to those who know and admire good science fiction—David H. Keller, Abner J. Gelula, John Russell Fearn, Harl Vincent, and Raymond C. Gallun. Keep it up. And continue the expansion of "Discussions." In some ways this department leads all the rest!

Richard Rush Murray
U. S. Army Signal Corps,
Signal Section, Panama Pacific
General Depot, Corozal,
Canal Zone,

(It would seem from the remark of the correspondent to which you allude that it is hardly worth while publishing text books on chemistry, yet they still appear and will continue to appear. We were impressed with the conviction that many of the criticisms on the

story "Radicalite," which we thought was extremely good, were quite absurd and Mr. Murray, in this letter puts his case very well. The writer certainly seems to be of a very good natured description and good nature is definitely a characteristic to be encouraged in all of us. EDITOR.)

"The Land That Time Forgot"—"The Skylark Stories"—A Difficult Problem in the Question of Life

Editor, AMAZING STORIES:

The first AMAZING STORIES that I ever read had the second part of Edgar Rice Burrough's story, "The Land that Time Forgot." Could you tell me what month and year that was?

I never read the "Skylark" stories, but have heard so much about them that I would surely like them to be reprinted.

Taking it for granted that life would spring up on any planet, does it not seem likely that if an intelligence, such as man, is an accident of evolution, we may be the only intelligence that there is? On the other hand, if it is the other way about, every other planet has had, is having or will have an intelligent form of life.

Harold Kritzer,
11 South 10th Street,
Newark, New Jersey.

("The Land That Time Forgot" appeared in the issues of AMAZING STORIES for the months of February, March and April in the year 1927. We are hoping for an early reprinting of the Skylark stories. There should be little trouble in procuring back numbers of AMAZING STORIES. You will observe that many correspondents announce that they have back numbers for sale.—EDITOR.)

The "Skylark Stories" and a New Story by Dr. Smith Referred To—Capitalism and Technocracy

Editor, AMAZING STORIES:

I just read your notice regarding the "Skylark" stories. I have already read them two or three times, but have not the slightest objection to doing so again. However, I would much rather see them in book form if it could be arranged. They would certainly be an acquisition to any library.

I have been looking forward to seeing more of his work, but am beginning to lose hope. A few months ago one of the rival publications announced a story by E. E. Smith, but it never materialized. Then there was a rumor that he had nearly finished another "Skylark" story. I'm getting all excited.

To change the subject, "Hibernation" in your July issue is one of the best stories I have read in a long time. But I have one bone to pick. Your author describes "Capitalism" in its very worst form and labels it "Technocracy."—the only difference being that these so called "Technocrats" hibernate their useless man-power instead of turning them out on the street to starve, which is at least a little more efficient and less cruel, I suppose. But the Technocracy I heard about was supposed to shorten men's labor and make machines the servants instead of masters as now. I suppose the explanation is that men like "Marsden" ruined the pretty theory.

"Unto Us a Child is Born" is horrible and yet it is fascinating. Jacob Hubbler's final decision was the only one possible under the circumstances. What had life to offer to people in those days?

Those new cover pages are interesting, but don't you think you should run a paragraph explaining what they are about. The old story illustrations caused a lot of argument about their accuracy, but at least we knew what they were supposed to be.

Lots of good wishes and prosperity in gobs.

E. M. Kox,
3988½ Woodlawn Ave.,
Los Angeles, California.

(We have the Skylark stories firmly in our minds. It seems probable that before we issue them as a reprint we will give Dr. Smith's last story which is undoubtedly the one you refer to. There is no conceit in our saying that we have so many good stories that we hardly know what to do with them. We do not wish to enter into the discussion of technocracy. We understand that it has rather gone into the shade. Dr. Keller is a strong advocate for the family life. He has charming children of his own and really ranks as one of our most impressive authors, because he has ideas. We expect to give another of his stories in a very early issue. The story "Unto Us a Child is Born" is certainly a plea for family life and parental love. The new cover pages illustrate each one a story in the magazine. It is a return to the old system and we are sure will be welcomed by our readers.—EDITOR.)

A Letter from the Golden Gate Scientific Association

Editor, AMAZING STORIES:

By the time the next issue comes out, the first magazine dedicated entirely to science fiction will be eight and half years old. About the same time will come the first anniversary of the death of science fiction's first fan magazine. At this time science fiction's first fan organization felicitates the one and mourns the other, also calling attention to the fact that they are still publishing, what may be called the science fiction fans' first magazine. It is now being printed by the publishers of Science Fiction Digest and subscriptions are separated entirely from membership in the International Scientific Association.

Furthermore the I. S. A. has entirely eliminated annual dues. Since our officers receive no salaries and pay their own expenses, we have

provided in our long-awaited new constitution that a membership fee ($1.00) shall suffice for life-membership.

One of the oldest and most famous science fiction classics was entitled "Around the World in Eighty Days." I note the present record is less than one tenth that figure. Selah!

Have more of your fine short stories.

Lester Anderson,
Golden Gate (formerly East Bay)
Scientific Association,
271 Peralta Street,
Hayward, California.

A Request for Back Numbers from the State of Washington

Editor, AMAZING STORIES:

I have just been going through my back numbers of AMAZING STORIES, with maledictions upon the heads of careless children—my own—and even more careless borrowers.

So now I am extending my subscription as newsstands are few, far between and undependable in this section of our state. And back numbers are scarce. I've industriously hunted the Discussions Columns over, but all the back numbers for sale are held far in the East, prohibitively far away for me. Won't you please publish a request for back numbers for sale, owned here on the Pacific coast, where the transportation will not bankrupt a poor science fiction fan? I've one instalment each, of the "Skylark" series, and "Spacehounds of I. P. C." and am positively suffering for the rest of them, all of all of 'em. Have tried every "back-number book store" I know of with no luck whatever. AMAZING STORIES is fine, but would suit me better if four times as many stories—as good—could be published at the same price.

Mrs. Helen Buller,
Marblemount, Washington.

(We have given your request for back issues to our Circulation Department. They may be able to supply you.

You couldn't be much farther from the east than you are now without embarking on the Pacific, but the Post Office will take care of the intervening distance for you. It is impossible, of course, to say what part of the United States can supply you with the numbers you request.—EDITOR.)

A Comforting Letter for the Editor

Editor, AMAZING STORIES:

Looking back through the June issue, I came upon a notice mentioning a story published a number of years ago, "The Face in the Abyss." It was said that there might be a sequel to this story and I have been waiting all these long weary years for the said sequel. Please try and persuade Mr. Merritt to write this sequel. This also reminds me of another story by Mr. Merritt, "The Ship of Ishtar" which I would like to see printed in this magazine, as I think it would appeal to its readers.

I have been an enthusiastic reader of your magazine, since it started and have all the copies but the first two or three which I missed. The magazine can't be praised enough, so I won't try, but will keep on reading it, which is a much better way to show how good it is. These fellows who always find cause to criticize because they don't like one story in the magazine give me a pain in the neck. Don't they realize that a story that doesn't appeal to them most likely appeals to someone else? So keep up the good work and I wish the magazine all the luck in the world.

F. J. Stringfield,
9321 213th Street,
Queens Village, L. I., N. Y.

P. S.—Let us have some more stories like, "The Skylark of Space," "Spacehounds of I. P. C.," etc.

(We wish to thank you for the aspect of your letter. It is most encouraging to find our efforts appreciated, and we can assure you that they are efforts. We often think that our readers would be surprised if they knew of the amount of work and of thought which is lavished upon AMAZING STORIES. You are not the only reader who is fond of the magazine and the staff cannot but feel that their efforts have an effect in making it a really individual production. Soon you will be getting more stories such as the ones you ask for.—EDITOR.)

Notes on Recent Changes in Our Magazine—A Good Copy of the "Annual" Is Wanted

Editor, AMAZING STORIES:

Although I have read practically every issue of AMAZING STORIES since its birth in 1926, I haven not written in to acquaint you with my opinion. However, the radical change which came over the "mag." in 1933 made me break my silence. I like AMAZING STORIES and shall continue to read it no matter how many changes it makes. Anyway, ever so often a story or two crops up which amply repays the reading of a whole volume.

The cover change is not so agreeable, but if some readers are afraid to leave the magazine with its old attractive cover on their respective library tables for fear of someone's pouncing upon it, it is O. K. by me.

The things I most violently dislike are the bad paper and the sub-titles. However, I guess I ought to be thankful for smooth edges.

I am not going to try to dissect the stories except to say that the general run do not come up to the standards set by such stories as—"Station X," "The Moon Pool," "Skylarks of Space," etc. The "Tumithak" stories though are great. Let's have more of them.

Do you have any of Taine's or Merritt's

stories in your advance files? I would like to read another story by either.

When is your Quarterly coming out? It is 'way past due now, and your bi-monthly will change your volume numbers by a month, not so?

I wonder if any of the readers have the Annual in good condition (with covers). I would like to buy or trade for it. Readers, please correspond and tell me.

Jerome L. Saperstein,
619 East Chevy Chase,
Glendale, California.

(Sub-headings have disappeared from our columns. We have carried out the expressed desire of many readers in omitting them altogether. At present we do not have any stories by the authors you mention in our files, but there is no knowing what may happen. The Quarterly went on sale November 10th. We fear you will have trouble in getting a copy of the annual. You might address our Circulation Department or try Friendly Book Shops, 83 Fourth Avenue, New York City. N. Y.—EDITOR.)

An Australian Letter

Editor, AMAZING STORIES:

Having just finished reading the June issue of A. S., I feel I must write and congratulate you on your excellent magazine. I have been reading our "mag." since August, 1932, and this is the first time I have written. You have the best collection of authors contributing and I, at least, am satisfied with your illustrator, Morey.

In every "Discussions," I notice, there are several letters from different people complaining about every thing they can; authors, illustrator, covers, quality of paper, stories, science content, etc. Well, the mag. suits me. The new covers improve the appearance, but it seems to me that Sigmond will soon run out of original ideas. If he does not, all the better, but if he does, why not put Morey on the front for, say, six issues, then Sigmond for six?

I would like to read more stories by Dr. Keller, Dr. Breuer, P. Schuyler Miller and Ed. Earl Repp. John W. Campbell, Jr., I consider to be the best writer of interplanetary stories, and his latest, "Beyond the End of Space" eclipses all his others. Harl Vincent writes an excellent fantasy, and I am glad to see the announcement of another of his stories in the next issue.

What has happened to the Quarterly? I obtained one in October last year and have only seen the advertisement of the other.

And reprints. Don't publish them in the monthly or in the quarterly either. But in fairness to those who seem desirous of them, I suggest an AMAZING STORIES Quarterly of Reprints. Then those who want them can obtain them and those who don't, etc. I notice a number of old issues for sale and as I desire to obtain same, I am hereby entering my plea in conjunction with any others who are more or less new readers. I would appreciate it greatly if those who have any old issues would write me, advising me what issues are for sale. I would like to obtain any issues before August, 1932. I have four old issues, Nov. 1930, Sept, 1931, Feb. and April, 1932, but if a complete set is offered I will take them all. I will pay exchange and duty, if any, if a reader outside of Australia has issues for sale.

Now one last appeal, more short stories and more poems.

Chas. S. Mustchin,
Tweed St., Coolangatta,
Queensland, Australia,

(An Editor has to get hardened to his job. He has to reject manuscripts which are sent in for approval, but for each rejection there is an absolutely valid reason, but the Editor is never very happy when he has to reject anything. His only armor against his woes is not to let himself think how the rejection will be taken by a writer. It is not exactly cold bloodedness that is required, but rather not letting oneself even think about the many disappointments which he is occasioning. One of our troubles is that we are so overstocked with stories, that we are rejecting more than would be normal. The names of authors whom you mention are firm and fast favorites with our readers and are always glad to write for us. The Quarterly went on sale November 10th. Your suggestion about a Quarterly of reprints is quite interesting and we will give it serious consideration. You may be able to get some back issues by addressing the Circulation Department, but they are often very hard to find. You might also address: Friendly Book Shops, for address consult the preceding letter. We will certainly give your plea for more poems consideration.—EDITOR.)

Issues of AMAZING STORIES Asked For—Likes and Dislikes

Editor, AMAZING STORIES:

Through my own carelessness I missed the May issue and all issues after including the July. I would also like to have the Spring-Summer Quarterly of 1933 and the issue or issues containing "Beyond the Focus" by E. V. Kissee. I wonder if other readers would supply me with the above? I have books, among them only two science-fiction, to trade for them and anything else of that type they can force themselves to turn loose.

Now for some comments.

Likes: 1. The cover; 2. The Editorial; 3. The stories; 4. The Questionnaire; 5. The Arrangement; 6. The Illustrations; 7. The advertisements—but!

Dislikes: 1. Topic-heads (they take up too much space); 2. The Number of Interplane-

tary stories (the tales of "things right here at home" have a kick, have "that something" which makes every reader remember it and want more); 3. The fact that we know little or nothing about authors and artists (why not a biographical sketch and picture in space used by topic titles?); but isn't three plenty?

Another reader-like: the one and two page stories. These are quite as good as the longer ones, if they are at all well told. And by the way, there is a short short story of the science-fiction type in one of the September issues of *Colliers*. Another thing, Bob Olsen can't handle the love interest in his stories.

J. L. Burt,
Box 161, R. No. 1,
Leland, Mississippi.

(Cross-headings in our stories have been definitely given up. Hereafter you will not see them. We have never liked to give space to biographical notice and to portraits of authors. Generally there is not much resemblance in that class of picture. Short short stories appear to be very hard to write. There are even institutes, in which the art of short story writing is supposed to be imparted, but Edgar A. Poe and O. Henry and Rudyard Kipling did not follow a fixed system in their work. The writer once submitted a story of Rudyard Kipling's to an Editor who was taken as an authority on short stories, who read emanations on them over the microphone, and he disliked or rather criticised the Rudyard Kipling as being good, but not being a real short story.—We will let the rest of the letter, which is certainly very interesting although short, speak for itself.—EDITOR.)

The Washington Monument Story Criticised Unfavorably

Editor, AMAZING STORIES:

It must be with a rather sick internal feeling that you publish a time travel story. Every one brings a storm of criticism. I am not narrow-minded enough to think it impossible to travel in time, but I do think that Mr. Arthur made numerous fundamental errors in his story, "Theft of the Washington Monument."

In the first place, he violates the generally accepted theory that time is a dimension—he calls it an electrical force. It is all right to violate theories in fiction, I suppose, so this isn't a real objection. But here are a few that Mr. Arthur should have explained.

1. Why did just the monument and the two men in it go into the future and not the air surrounding them, the ground beneath, etc.?

2. Why did the monument land on the earth and not in the part of space where the earth was when they left it? This would place them out in space.

3. Why was the surface level of the earth the same in the future city as in Washington, 1933? Even a difference of a fraction of an inch would produce a considerable jar when the monument appeared above it and dropped.

4. If the air from 1933 accompanied the monument into the future, what would happen when it merged with the air of the future? Would not the pressure rise to 30 lbs. per square inch and affect the ear drums of the adventurers?

5. And when, for instance, a cubic foot of granite occupied the same place that a cubic foot of air took up, what happened? Is there not a law of physics stating that no two objects can occupy the same place at the same time?

6. When two men out of all the world see the world itself being destroyed, why do they forget about it? (This last question, of course, concerns the plot only and is up to the author.)

I think the new size is very good. The covers are excellent, but the inside illustrations are not.

Robert Hart,
67 Center Street,
Wethersfield, C. D.

(It is hardly worth while to speak of fundamental errors in a flight of fantasy, such as you are alluding to. It is so imaginative a production that it does not need really serious treatment. If you read between the lines, you will feel that there is a message contained there irrespective of any idea that the physics of what is an impossible achievement are not a little bit enlarged upon. Judging from the letters which we have received, "The Theft of the Washington Monument" seems to be a very good story. —EDITOR.)

An Amusing and Scolding Letter

Editor, AMAZING STORIES:

I surprised myself considerably the other day, when going through six or seven back-issues of "AMAZING." For many months I had been throwing the magazine aside with disgust. In my mind AMAZING STORIES was a degenerate of the first class. But when I again took a look at the stories I found that the greater part I mentally catalogued as being good. Amazed I again scanned them, and finding my opinion the same, I decided that disgust with the whole magazine had been engendered only by several details in the makeup of the magazine. Large type editorials, titles for every other paragraph, widening of margins, numerous other devices calculated to leave the same number of pages in the magazine, but bring down the number of words per issue; also an incalculable amount of typographical errors; and the abandonment of serials in a couple of issues, for I hold that serials are the life of a magazine, as they join the issues together, from month to month, and also because there is a chance of their being published in permanent form—namely books. I also found that there were four or five stories which were very punk, namely "The Crime Crusher" by Olsen and "The Phantom Terror" by Repp. Outside of these discrepancies and

others unnamed, I found myself pleased with the magazine, considering it worth two bits.

Let me continue a bit with the serials. I enjoy them and look to them much more than anything else in the magazine. Cut out the serials and I am quite sure I would cut out the magazine. That is the reason I read another magazine which boasts four serials a week—the *Argosy*. Which quite handily brings me around to the subject of serial reprints—as it was in *Argosy* that the greater number of fantastic classics appeared. You might reprint a few of those old novels in preference to stuff you've been passing to us lately in 2-issue installments. I would suggest "The Girl of the Golden Atom" by Cummings for one, although not having read it I am not sure of its merit. The majority of people who have read it say it was good. However, if it is anything like its sequel, "Princess of the Atom," or some of Cummings other novels, do *not* reprint it. "The Blind Spot" by Hall and Flint (deceased) should prove to be more good material, although if it is as unstartling as its sequel, "The Spot of Life," don't print that either. You might also catch hold of an England novel, preferably "Darkness and Dawn" and reprint that too, although having never read it I can't vouch for it. Your reprint of Garret Smith's "Treasures of Tantalus" seemed to go well, why not get another of his, preferably "After a Million Years?" Or have him write an original! But! one thing I wouldn't want reprinted—"The Skylark of Space!" Wait, let me amend that. If you must reprint it, don't drag it over three precious months—put it in one issue of the magazine, with a few additional short stories by good authors to catch those that have read the story. As for reprinting "Skylark Three," such a notion seems absurd. It's only been three years since you published that story. Wait a decade, and with the cries of a million readers ringing in your ears, reprint the entire first three works of Edward Elmer Smith—*if* they have not already appeared as books! For it seems impossible that Smith's readily seen talent should not be commercialized by book-makers.

Having not much more to say, except that I am glad to see "Triplanetary" by E. E. Smith coming. It's the greatest landmark since "The Metal Doom" by Keller the Great (as somebody rightly dubbed him!) One thing more! I feel like an old, old man. My dreams have crashed about my ears. The world seems gray and cheerless. My step is lagging, my head bent low, I have a constant sensation of swooning. The cause? In my mind's eye I carry a vision of the sterling aristocrat, 8½ x 11½. Under my arm, the fallen strongman, 7 x 10!

Paul Cahendon,
322 W. 4th St.,
Cincinnati, Ohio.

(You will find that the reduced format of the magazine is a decided improvement and you will see that it has found favor with many of our readers. You will observe if you look through our columns that the new Discussions Columns compare in size and quality with those which were given in the larger, old time AMAZING STORIES.—EDITOR.)

A Very Comforting Letter for the Staff

Editor, AMAZING STORIES:

Congratulations! Editor on the new small size AMAZING STORIES. It's a wow!

Please keep it small and run reprints of the stories that you have planned.

Charles Johnson,
Annandal, Minn.

(The title we have given at the head of this letter expresses our point of view.—We always felt that the old size was justified by the law of custom, but if one looks at a shelf of books in a library he will see that this smaller format, as it is called, has a far more literary or 'library' aspect than the almost clumsy size of the former issues. The favorable view is confirmed by the fact that so many magazines have reduced the size of their page.—EDITOR.)

Discussions Wanted in Abundance—Other Favorable Comments

Editor, AMAZING STORIES:

Am very much pleased with the new size magazine except for one thing and that is the shortening of the Discussions Columns. Please keep that as long as it was before as that was a very important part of the magazine. I hope you don't go bi-monthly again very soon, as that is a long time to wait for this very educational magazine. Morey is getting better right along if it is possible for him to improve, which I don't think is so, for his work is 'Perfection' if I am any judge of drawings. I've only read the Editorial and David M. Speaker's story "The Superman." They were both fine. Well, I will close waiting for the next issue.

Alon F. Wiggins,
2603 Curtis Street,
Denver, Colorado.

(We think you are mistaken in your idea that the Discussion Columns are not sufficiently long. They really fill a very large part of the magazine and the individual desire of the Editor along these lines would be to make them still longer. The letters being so short, are easily produced by the writers and it is a pleasure, we are certain, with our Discussion Writers, to see their names, in print and you may be sure that we do not pick out or even attempt to pick out complimentary letters. We put them in on the issue of interest and merit and if they abuse us we have to stand it. We are here to be criticised, but back of it all we have a strong desire to make friends among our readers. Your letter is appreciated by us.—EDITOR.)

An Unsigned Letter, Which Is So Appreciative of Our Efforts That We Must Publish It

Editor, AMAZING STORIES:

I have been a reader of AMAZING STORIES for about three years now, but I have never written to you before. However, A.S. is becoming so good, that I feel that I must write and express my appreciation of THE magazine. I have no brickbats to throw, the magazine is quite O.K., and why people worry about the cover, paper, etc., I don't know. There is just one thing though. I should like to see a few of Wesso's illustrations in the monthly. There is nothing the matter with Morey, but I prefer Wesso's illustrations to his. The best story I have ever read in the mag. was one about meteors which, coming from Mars, bombarded the earth. The story concluded with all the meteors being sent back to Mars. I have forgotten the name of that story. Another great yarn was "The Romance of Posi and Nega."

Well, in closing, I wish A. S. every possible success in the future, and you will always have an admirer and reader in me.

L. S.,
Auckland,
New Zealand.

(We feel it is quite a triumph to get so many letters from New Zealand and Australia. Although we publish this one, there is a code very well understood by writers and Editors that letters which are to be printed should always be signed. If the writer objects to having his name in the magazine, he can easily have it cut out by notifying the Editor of his desire.—EDITOR.)

A Letter from a Member of the Fair Sex, and a Good One (The Lady or the Letter?)

Editor, AMAZING STORIES:

The August-September issue was just grand, and from the looks of the coming October issue, it will be very exciting. It seems like I never waited for a magazine so long before.

Go on readers and rave over what you want the cover to look like. As long as the stories are good, I won't mind one little bit what the cover is like.

The Discussion column sure is a hit. The readers' letters and the Editor's answers are very entertaining. But honestly some of those stories make me shiver when I read—"Extravagant Fiction To-day—Cold Fact To-morrow." I wouldn't care to live in some of those to-morrows.

Do you know once in a while I read something in A. S. that is not unlike some of the fairy tales I read as a child. But having read fairy tales once I don't mind it.

I agree with Miss Virginia Kidd about those paragraph headings. Please stop putting them in. You almost get a summary of the story out of those headings.

Excuse my ignorance Mr. Steven Fogaris, but, what does "No me gusta" mean? After reading Mr. H. D. Spatz' letter about those sub-titles, he is telling you better than any of us could, how much we love those titles. Three cheers for Mr. Spatz. Even Mr. J. H. Link ought to agree to that. He is certainly telling the picture lovers where to get off. But don't you understand, Mr. Link, it's letters like yours and those of the picture lovers that make these columns such fun. See, even you joined in to tell us how dumb we are.

After that statement I stand meekly by waiting for the bombardment of curses hurled at my little head by Mr. Link. Oh dear, never have I enjoyed Discussions so much as now. I will answer all letters, especially those who are going to bawl me out for some reason or other.

Mrs. Vida Claire Schneider,
125 Poningo Street,
Portchester, N. Y.

(In old times letter writing was one of the recognized accomplishments of the woman's world. Men would get to the point, while a woman would take longer and used to be accused in a jocular way of putting the gist of the letter in the postscript. But we find that when we receive a letter from a lady reader, it is apt to be a very good one and this one is no exception. We are more than pleased to realize and be told by you that you enjoy the Discussions. Some years ago there was a magazine published in England of which a very considerable portion was made up of letters from readers and it is astonishing what good reading they made, some by quite uncultured men, with the presence in them of true cockney English. We would like to get more letters from you. We thank you for this one.—EDITOR.)

The Thermit Reaction and How to Prepare for It—Start It—and Note on Precautions

Editor, AMAZING STORIES:

Mr. Mulholland's questions on thermite were very interesting to me and prompted me to make some investigations. Aluminum's affinity for oxygen makes it a very good reducing agent on oxids of other metals.

In the reaction that Mr. Mulholland inquiries about, aluminum acts as a reducing agent, reducing iron oxid to metallic iron.

In the thermite process the reaction is best carried out by using ferric oxid or iron rust, and if one pound of the oxid is used approximately .799 lbs. of metallic iron is released.

Theoretically 1. lb. of iron oxid mixed with approximately .337 lbs. of aluminum powder will produce .699 lbs. of aluminum oxid which rises to the top as slag but for best results about 1% more aluminum powder should be used to make the reduction complete.

The experimenter should only try small quantities at first, and should use a clay crucible for the reaction.

Mix 1. ounce of iron oxid with .34 ounce of aluminum powder and mix well so that all parts are in as close contact as possible; on top of this place a small amount of sodium peroxide mixed with aluminum powder in which is inserted a ribbon of magnesium. Light the magnesium ribbon with a match held in a pair or pliers so as not to get the hands too close to the mixture, as the heat reaches between 3,000° to 3,500°C.

When the reaction begins, it proceeds very rapidly throwing sparks of aluminum oxid into the air.

I have read AMAZING STORIES for five years and I think that it is a very fine magazine for any one interested in science. This is the first letter that I have written to your magazine. I hope it answers Mr. Mulholland's questions to his satisfaction.

Robert Anglin,
173 W. Main Street,
Danville, Va.

(This letter is one which should be preserved by experimenters interested in the production of heat by the reaction of an oxidizing substance with aluminum powder. We are sure that Mr. Mulholland will be pleased with your letter.—EDITOR.)

Our Two-Month Issue Approved Of—Friendly Criticism and Suggestions

Editor, AMAZING STORIES:

I have the August-September issue of your magazine before me. I think it is one of the best all-around issues you ever put out since I have been reading A. S. (June, 1931). Here is the way they appealed to me. (1) "The Essence of Life" by F. Pragnell. I welcome this good writer to your pages. The interest and suspense were greatest in this story. It was descriptive and realistically told. (2) "The Meteor-Men of Plaa," by H. Kostkos. This is a close second. The story was well told and had a wealth of new ideas. (3) "Children of the Great Magma," by Kateley. Walter Kateley is one of my favorites. The life of those primitive people was told expressively and the story was swiftly moving. (4) "The Silicon Empire," by Fritz Burg. The silicon amoeba was interesting. (5) "Adrift on a Meteor," by Jack Winks. I could just hear the Captain talking and I hope we have another tale from his lips. (6) "The Pellucid Horror," by B. F. Ruby. (7) "Across the Ages," by Allen Glasser. (8) "Head Hunters Fooled and Foiled," by Drennon.

Your Editorial was the best thing I have read on old time railroading. I hope you keep it the same length and just as interesting. The Discussions are as usual. I like their arguments and rebuttals bringing much science into play.

Now for some debated subjects. I am glad to see you have gone back to the old covers as they were more striking, beautiful and a real detailed work of art. A few reprints of extra fine stories are all right. I consider Paul the best artist, but Morey and Wesso are good. I have never seen any of his works, but if so many want him, give Muller another trial. Several months ago you said something about reprinting the "Skylark" stories. From all the praise they received, I am sure many other new readers like myself are hungry to read them. Give us a break, Mr. Editor, even if the old readers do kick. Now here's an idea.

Get out an extra, the size of the A. S. Quarterly (cover size). Put both stories in it complete. Make about ten pictures for each story, one set done by Wesso and the other done by Morey. Use the size print of the Spring-Summer Quarterly and you can do it in 175 pages or less. Make it 75c or $1.00 and you will be swamped with orders.

I saw your new number at the Trinity News Stand. I like this handy book size better, but it's too little. Make it 200 pages with the regular story pages 800 words to the page, and I wouldn't ask for a better bargain, if you keep up the August-September issue quality. Make the serials book-length and give us ten pictures to each number please. I like about ten pictures to each monthly number.

Now, here's another idea. Instead of conducting a questions and answers page or pages, give us an article. Here are some suggestions. Make it ten pages and write some interesting science such as all the plans for a successful rocket flier. It could be partly theoretical and you could give much useful information as to the type of fuel used, and the power needed. Materials for the construction and the weight of all these and some estimated costs to give it practical consideration. There are worlds of subjects such as the solar system, the world 100 years from now, new inventions and where they are to-day such as television, experimental aircraft, etc.

If I write anymore the new readers will think I am the Editor and a mighty poor one at that, but I've been silent so long and I am so interested in "our" magazine, I've got to get it off my chest.

Allen B. Brown,
Box 307,
Trinity, Texas.

(It is a real comfort to get a letter approving of our August-September issue. It certainly had good writers represented in its pages and it has made a sort of breathing space for all of us. The interest of the Editorial on "Old-Time Railroading" was, in the fact that it was absolutely authentic. The electrically driven railroad cars go at three times the speed of the old American cars and can be stopped in an astonishingly short space. This latter feature is a

great safeguard. We will try to please you with our future Editorials. The Questionnaire takes very little room and we consider it quite an interesting and characteristic feature of the magazine.

To get the plans for a successful rocket, if they ever could be got, would require endless expense and experimenting. It is no use writing about the world 100 years from now, it is more to the purpose to write about it 100 years ago as in the Editorial which you commend.—EDITOR.)

An English Branch of the International Cosmos Science Club Is Formed

Editor, AMAZING STORIES:

English readers of this magazine will be pleased to note that the 'International Cosmos Science Club,' has formed a branch club in England.

The object of this Club is to encourage science correspondence, and the reading of science fiction, among its members.

The Club will publish its own newspaper, dealing with science (all branches), and every member will stand an equal chance of contributing an article or a story to its pages.

Interested readers requiring fuller details, with a view to joining, may obtain same by writing to

John V. Garrett,
I. C. S. C. Dept.,
New Inn Hotel,
High Street,
Cowes, I. of W.,
England.

(A very pleasant feature of our magazine, as far as the Editor is concerned, has been that it has led to the formation of various clubs, of which we have been so glad to give notices, and we take special pleasure in publishing this letter from the Isle of Wight.—EDITOR.)

A Letter from One of Our Authors

Editor, AMAZING STORIES:

I hope I'm the very first to congratulate you and the Teck staff, because of the new AMAZING STORIES pulp and shape.

You have clothed AMAZING amazingly well with a new, formal dignity and fitting style. A practical size for pocket and shelf too.

I trust you will make many dollars with your publications and guide as many faltering feet up the difficult ladder of technical knowledge. And may your ill fortune be small as an atom's electron!

Your new issue (October, 1933) is especially benefited by Neil R. Jones' "Into the Hydrosphere"—exceptionally well written with the acme of imagination in the adventurous plot. Jones made flesh and blood out of his men of steel. Well done, Neil, you brilliant cuss—you stirred my sluggish brain—I thought mighty thoughts!

And, "The Tree Terror," by the wise and cynical David Keller. A splendid fable with Keller's usual polished academic style. I use the term "fable" as Webster tells us in part that a fable is "a narration intended to enforce some useful truth or precept" (Dave, you can send me a pint of prescription whiskey for this —see how my pen trembles!)

But "The Diamond Lens!" It's a literary diamond by an old master. Perfect in plot and wording—What an inspiration for all us "hack" writers of modern science fiction! Again this weak pen falters with shame!

Good luck to you—vast as space!

Joe W. Skidmore,
1909 Weepah Way,
Hollywood,
Laurel Canyon, Cal.

(Mr. Skidmore is well known as one of our favorite authors, and this very nice letter will be, we are sure, enjoyed by all. The author of the "Diamond Lens" did not do much fiction writing. It is a pity that he did not do more. David Keller, whom you term cynical, in his character is far removed from any such suggested quality. He is what may be called a universal favorite—so many readers admire him. —EDITOR.)

Appeal to Readers Concerning Indexes

Editor, AMAZING STORIES:

Please run the following in your Discussion Column. We have been for some time occupied in compiling an index for AMAZING STORIES and other science fiction magazines. Before publishing the same we would like to hear from readers their preference as to the following questions:

1. Shall we publish these indexes, each index covering a single science fiction magazine, or shall we publish a general index listing each author's works regardless of which magazine it has appeared in?

2. Should the indexes consist of sheets, which could be sold at from 25c to $1.00 according to how many magazines it covered, or should we bind them as a book, which would cost about $1.00 additional?

3. It will involve twice as much work and force us to charge double if our index lists alphabetically the authors and their stories and then at the back of the book list the stories alphabetically. Is the latter listing of sufficient use to justify the extra expense?

We would greatly appreciate hearing from as many readers as possible as to their views. We would be glad, in compensation, to tell them where and in what issue they could locate any story they would like to read.

Dale Book Store,
231 No. Illinois St.,
Indianapolis, Indiana.

Just 7 Days

....that's all I need to PROVE I can make You a NEW MAN!

by Charles Atlas

NOTE: *No other Physical Instructor in the World has ever DARED make such an offer!*

Holder of the title:
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How I changed myself from this "below average" physique into the man who won—against all comers—the title of "World's Most Perfectly Developed Man" is an absorbing story. It is told in my book, "Everlasting Health and Strength," which I will send you *absolutely free* if you fill in and mail the coupon below.

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Big *claims* mean nothing! That is why I offer you more than *promises.* That is why I offer you a 7 days' trial of my famous method, *Dynamic-Tension.* That lets you see for yourself that I back up every promise I make. That PROVES beyond a flicker of a doubt that I *can* and *will* turn you, too, into a vital, powerful NEW MAN.

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Don't be held back by a below-par body! Now you can easily and quickly make this new man of yourself! Do what my thousands of other pupils did—send for a free copy of my illustrated book, "Everlasting Health and Strength." Learn how I built myself up from a weak, no-muscle, always-tired, "runt" to winner of the title, "The World's Most Perfectly Developed Man." Gamble a stamp to mail my coupon—to learn how YOU can win the biggest prize in life—a handsome, healthy, husky body. Address CHARLES ATLAS, Dept. 9A, 133 E. 23rd St., New York City.

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Dept. 9-A
133 East 23rd Street,
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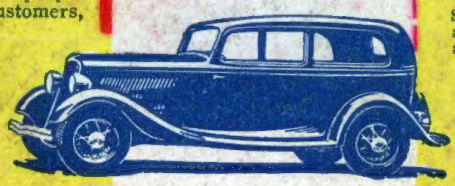
FREE

New 8 Ford Tudor Sedan

TO PRODUCERS!

This is NOT a contest or a "prize" for solving puzzles. This Ford is not given to you in place of your money. No! But to everyone who proves to me that he is "on the job" and building up a real trade through proper and courteous handling of customers, I give this car as an extra bonus—in addition to what you make every day in cash. If you already have a car I'll give you an equal amount in cash instead. I'll explain this fully when I send you details of my Trial Package Plan.



NO LIMIT TO MY OFFER

You may wonder at making such big money, but this plan of Trial Package distribution is doing exactly that for hundreds. The "Trial Package" Plan is simple. Your first work on this new job will be to distribute introductory packages of my line to people in your neighborhood. After they have had a chance to use these products and see how they save money, they give you their orders for full size packages. You handle the money and deliver the goods. And a big share of every dollar we take in goes into your pocket as your pay. The pay for this work is frequently as high as $15 a day. Even at the start you can make up to $9.50 a day—regular and steady.

YOUR OWN GROCERIES AT WHOLESALE

When I send you instructions for making money on my new Trial Package Plan, I also give you rock-bottom, wholesale prices on your own groceries—about half of regular retail prices. This is in addition to your regular pay. So you can MAKE big money in cash and SAVE big money on the things you use in your own home.

HAVE PERMANENT ROUTE WITH BIG WEEKLY CASH INCOME

With my plan you should have a big list of regular customers that you call on every two weeks, and with an established route which requires only 30 calls a day your pay can easily be $15 a day steady. If you want to have only a 15-call route and work only half days, you can still make up to $7.50 a day—and even that gives you $45 a week—not bad for half time.

DON'T SEND MONEY—JUST YOUR NAME

Don't confuse this with anything you have ever read before—I don't want your money—I need help. Send me your name so I can lay the facts before you, then you can decide if the pay is satisfactory. You don't need experience. I furnish everything including FORD SEDAN to producers. Don't expect me to wait indefinitely to hear from you. If you reply promptly it will be a strong thing in your favor with me. SEND TODAY FOR FREE FACTS.

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